Student's Manual of the Disorders of Menstruation

THE

DISORDERS OF MENSTRUATION

A PRACTICAL TREATISE

BY

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Virtute et Opera.

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TO THE MEMORY OF MY FATHER

GEORGE L. UPSHUR, A.M., M.D.

WHO FELL IN THE DISCHARGE OF PROFESSIONAL DUTY, SEPTEMBER 19TH, 1855, WHILE BATTLING WITH THE DREAD EPIDEMIC OF YELLOW FEVER WHICH PREVAILED IN NORFOLK, VA., IN THAT YEAR,

THIS LITTLE VOLUME IS MOST TENDERLY AND AFFECTIONATELY INSCRIBED BY

THE AUTHOR.

PREFACE.

THIS little volume is the result of work during the past year, done at odd times, and by request, for a definite purpose. Circumstances which have since occurred have changed its destination. Nevertheless, it is modestly hoped that the labor will not be unappreciated, and that a lenient professional public will receive it so kindly, that it may be the humble means of assistance to some brother in the time of doubt and difficulty.

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INTRODUCTION.

MAN'S highest ambition in this life should be that he may be useful to his fellow-man. Useful he may be in two ways: by assisting his collaborateurs in accomplishing best the object which both he and they have in view; and secondly, by the service directly rendered by himself to the individual requiring assistance. This is a general truth, and the more it is pondered, the greater enthusiasm will it arouse in the breast of the man whose heart beats responsive to every appeal for the relief of human suffering, and whose energies are thereby quickened, that he may bring the needed relief. This is true if the suffering be only the misery of destitution, only the woe of degradation. But, if it be physical suffering, and the skill of our art is called on to relieve it, there is an added incentive to effort, and if the sufferer be woman, man's crown of glory, the chivalry of his whole nature gives warmth to his zeal, increased acuteness to his investigation, yea, even a prayerful earnestness to his research, that he may bring relief to her, who to him represents the embodiment of elevated purity, refinement, and fortitude under suffering, in the whole human race.

Surely the lot of man and woman is not an equal one in this life. 'Tis true oftentimes his labors are most arduous, but there comes the time of refreshment. Woman's work, 'tis said, is never done; she labors on ever, uncomplainingly and cheerfully; she bears the pain of childbirth, and its dangers, without one word of reproach to the stronger sex, and rejoices when the sorrow and agony of the trial is over "that a man has been born into the world." Parallel with this, each month, silently she endures for days the discomfort of the menstrual flow, the one thing in her estimation a curse and a reproach. We do not say it should be so regarded, *per contra*, it is a blessing to her in disguise, when healthfully and therefore painlessly performed. Were this always the case, our labors instead of being just begun would be ended here. Unfortunately, prudence is not often found in woman's composition. Its neglect gives us the subject for treatment in the following pages, as well as much thought and anxiety for the best management for the relief of the ills which follow in its train, evils which often defy relief or cure, and become lifelong. This condition of things often springs from ignorance or carelessness on the part of mothers, in regulating the habits of our dáughters at that most important period of life, puberty. Starting wrong at the beginning of the function, the woman, in spite of our greatest skill, goes wrong to the end. Her usefulness and happiness are blasted, and she

becomes an invalid for life. Hereafter we shall consider this cause of disordered menstruation, and sound a note of warning, which we trust will make the physician ever be on the alert to warn and instruct the matrons of this land to guard well the health of the girls as they bud forth into womanhood. Of course we do not forget that many of these evils arise later in life, from accident, from complicated labor, from circumstances which have been unavoidable.

If in this effort I can assist even one of my brethren in his battle with human suffering I shall feel repaid, proud in fact that it hath been vouchsafed to me to be both directly and indirectly instrumental in contributing to the relief of human suffering, and that too in the gentler sex. Surely, only they, in the suffering of these diseased conditions, know better in their own experience the agony which words may not so picture as to give to any other mind an adequate idea of the pain borne. But I must not further deal in generalities, nor allow my fancy to run riot with my wits. I must ask the indulgence of my readers if, in the subsequent pages, I shall claim a little latitude, the better to illustrate and enforce the subject I have in hand. My ambition is to add my mite, to instruct and aid my brethren in the treatment and cure of these disorders, which form so large a part of their experience in the every-day struggle with disease. I know full well it is

a field which has been well gleaned before this day. The master minds of Marion Sims and his compeers have wrestled with these maladies, but perchance a feebler light may throw a ray athwart some gloomy vale, and lighted by this spark may be the means under God of bringing hope, good cheer, relief, and cure to some poor sufferer who long has brooded in despair, nor thought there could be aught this side the grave for her but suffering, and endurance of the pain.

The Disorders of Menstruation.

CHAPTER I.

REGIONAL ANATOMY OF UTERUS AND APPENDAGES.

To understand fully any derangement in the proper performance of the functions of the uterus it is essential to have clearly mapped out in our minds its anatomical relations. This is especially needful, because a displacement, or some pathological condition of some appendage, may be the cause of the derangement which we are called on to relieve, and it is easy to understand how, if the physician be ignorant of the topography of the pelvic organs, he may fall into error in his investigations into the cause and nature of the diseased condition.

The tissues immediately involved are, first, the parenchyma of the uterine walls, or rather the uterus itself. A very important fact here to be remembered is that this organ is composed of layers of muscular tissue, firm, elastic, and capable of great contractile power, belonging to the involuntary muscular system; the mucous lining in the interior, and

the peritoneal (serous) covering externally. Then come the Fallopian tubes with their individual and peculiar conformation, especially of the lining epithelium, being *columna*, instead of tessellated; the beautifully arranged ciliæ, in the tubes, for propelling the ripened ovum into the uterine cavity. Next, the broad ligaments, the utero-sacral and utero-vesical ligaments, the former like a fold of membrane doubled on itself, and containing some muscular fibres, and between the layers large quantities of cellular tissue. Finally, the round ligaments, which act as checks to prevent backward displacement. The ovaries, connected with the uterus and in the most intimate nervous sympathy with it. Then the cellular tissue entering into the general make-up of the pelvis, giving softness and elasticity to its walls and firmness to the pelvic floor, and liable to be easily inflamed by many disturbing causes, such as cold, increasing the natural determination of blood to the pelvis and its organs, and transforming a physiological engorgement into a pathological congestion, which may result in abscess, or indurations, etc., thus indirectly deranging the functions of the uterus. Not least to be remembered, too, is the abundant nervous supply to the pelvic organs, the uterus and ovaries especially, and the facility with which any derangement of this supply occurs, either from causes which produce less than the normal nerve stimulus, or those which so act as to result in over

nerve-stimulation, so that the effect is undue excitement.

The anatomical arrangement for the support of the womb is such that any cause as a fall, increased weight, contractions cicatricial in character, or any sufficient cause, may result in displacement of the organ, or such contortions as to interfere with the proper outpouring of the menstrual fluid.

A correct knowledge of the proper dimensions of a normal womb has an important influence in the intelligent treatment of any maladies to which the uterus or its appendages may be liable, bearing in mind always that the uterus of the woman who has never borne children is smaller than the uterus of one who has. The virgin womb should be about two and a half inches long, a multiparous womb not over three inches; the neck of either should not project into the vaginal canal more than from three-fourths of an inch to an inch. And here there is a difference in the womb that has borne children and that of the virgin, in that the cervix is more pyramidal, and the shape of the os uteri is more rounded and more patulous in the former than in the latter.

These seem to be trite facts to which to call attention, but they are nevertheless practical facts, and it is the neglect of, or forgetfulness of, these little matters which is often the cause of failure to relieve hemorrhage which is not only distressing, but becomes alarming and dangerous. Now, even at the

risk of being tedious, let us look more minutely into the topography of these pelvic organs. The cavity of the uterus is a flattened tube, larger above than below, most constricted at the os internum. The function of these ligaments before mentioned is to sustain the womb in the pelvis and give it perfect mobility. Its proper position should be at a point where a line drawn from the umbilicus to the tip of the sacrum intersects a line running transversely from one ilio-pectineal line in the pelvis to the other. The normal condition of the uterus is slight anteversion, the womb being a little bent on itself, just as a rubber tube on which pressure has been made at either end bends at a curve in the middle. This tendency to bending has an especial bearing on the pathology of obstructive dysmenorrhœa, and I shall again allude to it when I come to consider anteflexion of the uterus. We must not, however, forget that all the surrounding tissues of the womb in their normal condition tend to exert a sustaining effect upon the uterus, and to retain it in its natural position. This tendency is modified or impaired, however, if there has been laceration of the perineum, as the result of labor, or from some other cause. This injury does away with the abutment on which rests the posterior column of the vagina, and admits of an inclination in the womb to retroversion. The muscles therefore which enter into the formation of the perineum must be included in a

consideration of the supports of the uterus, and injury here may be at the foundation, may be the primary cause, of a secondary condition which has produced irregularity and disarrangement of the menstrual function.

Finally the hymen, situated in the vicinity of the vulvo-vaginal orifice, usually a thin delicate septum. It may be absent; most commonly semi-lunar in shape. It may be annular, with only a small orifice in the centre. It may be imperforate, and thus in the anatomical arrangement we find an obstructive cause of amenorrhœa; not absolutely true amenorrhœa, but relatively true, because while the blood has been discharged from the womb it has not passed away, but been retained in the vagina. Be it remembered, however, that the hymen is not a *tense* membrane at the mouth of the vagina, but relaxed and often lying in apposition with the posterior vaginal wall when the vaginal canal is closed, and the anterior and posterior vaginal walls approach each other. The ovaries are situated on either side of the uterus and near the extremities of the Fallopian tube; in early life smooth on their surface, but scarred and nodular when the menstrual function has for a time been established, from the rupture and discharge of the Graafian follicles. Any lesion occurring in these little organs, enlargement, inflammation, atrophy, or displacement, may be the starting-point for trouble. They are extremely movable, and within certain limits their position may be and is frequently

changed without harm resulting. "The female pelvis is noted for the variety and number of its venous channels, and their extensive anastomoses, each pelvic organ having a plexus which almost completely invests it, and which by their anastomoses with each other and the veins of the perineum form a continuous chain of veins from the sacrum posteriorly to the bulbs of the vagina in front. The broad ligaments also enclose extensive venous plexuses. The veins of the pelvis are almost entirely destitute of valves, hence their communication with each other is of surgical importance from the danger of excessive hemorrhage, which they entail upon any wound of the pelvic organs, or even of the structures which compose the pelvic floor" (Ranney, *Obstetrical Journal*, vol. xvi. No. 6, pp. 570–71). Likewise any cause affecting this vascular supply may have an important bearing upon the causation of uterine hemorrhage.

Although I have merely glanced, I confess rather imperfectly, at the pelvis and its contents from an anatomical standpoint, I trust that sufficient has been said to overcome any obscurity in dealing with the more practical part of our subject, and I now pass to the consideration of the physiological performance of the act of ovulation and menstruation, that this latter, considered in conjunction with the anatomical relations of the pelvic contents, may enable my reader the better to follow me in the discussion of the various menstrual derangements.

CHAPTER II.

THE PHYSIOLOGY OF MENSTRUATION AND THE UTERUS.

THE irregularities which occur in this function can always be traced back to some cause at the time of puberty, or are to be found at the second critical period in a woman's life. To be more explicit, there is difficulty and delay in the establishment of the menstrual function ; or there is imprudence on the part of the girl, or woman, in the form of taking cold or over-exercise, or mental application. There may be some congenital difficulty, as anteflexion of the womb, the exception to this rule being trouble, the consequence of difficult labor, or imprudence during the puerperal month, the troubles which occur at the climacteric period being usually of the hemorrhagic form, and often due to morbid growths of some kind, to relaxed uterine tissue, or the development of malignant disease.

Let us examine the physiological performance of the function of menstruation, and trace if we can how the physiological condition can be exaggerated as usually to explain the pathological state when there is a derangement, whether it be in the form

of amenorrhœa, menorrhagia, metrorrhagia, or dysmenorrhœa, with very slight exceptions. At the age of about fourteen we find there begins a change in the physical conformation of the female; the breasts enlarge, the hips broaden. This change extends to the uterus and ovaries. The uterus, which up to this time had been rudimentary, begins to grow, the ovaries enlarge, and begin in earnest the process of ovulation. It is claimed by some authorities that the function of ovulation is performed even in very early life, but at puberty there is a radical change. The ovum matures, finds its way to the surface of the gland, ruptures, and is caught in the Fallopian tube, and passes on into the cavity of the womb. There is blood poured out into the cavity left by the escaped ovum, which undergoes certain well-known changes, and we have the corpus luteum formed. Coincident with the escape of the ovum, immediately preceding or following it, the mucous lining of the womb becomes engorged with blood, and there is relief afforded by a physiological process, namely, the occurrence of a capillary hemorrhage lasting from three to six days. The blood, as it issues from the uterus, seems to be identical with ordinary blood, but the acid mucus, with which it becomes mixed in passing through the vagina, prevents coagulation. This is not true if the discharge be excessive, because some of the blood does not have its fibrin impaired by the ac-

tion of the mucus, and clots are formed. Autopsies made on patients dying during the menstrual period have shown the mucous lining turgid with blood, the veins especially being very much engorged. There is still some obscurity as to the true relationship of ovulation and menstruation. It is contended by some that the functions are separate and independent, and simply coincident in a certain sense. But the flow contains not merely the mucus and blood, but elements are found out of which is elaborated the decidual membrane, if the ovum is fructified, being wasted in the discharge, if not wanted to fulfil the office assigned them. Here, perhaps, lies an explanation of the formation of the membrane in certain forms of dysmenorrhœa, when a physiological condition from some cause has become pathological. There must of necessity be a close connection between the two functions. The maturation and discharge of the germ-cell causes great vascular excitement. Why should not the lining membrane of the womb, through intimate nervous sympathy acting through its vaso-motor system, produce the congestion which we find present? Nature, all-wise and provident, thus lays, as it were, her foundation, ready to uprear the future structure of a human soul if the ovum be fecundated. Look at the conduct of the uterus in all its varied conditions, and the intimate association of menstruation with ovulation has the weight of evidence on its

side. At the period of its cessation the woman becomes sterile, the child-bearing period ceases; if this was not true pregnancy might and would still occur. The experience of Dr. Battey, in his operation for hastening the climacteric, in cases of hitherto uncurable dysmenorrhœa, fibroid tumors, etc., though it has sometimes failed in accomplishing the end, yet the success attained lends weight to the theory. It is the most rational explanation. We see, too, in diseased conditions of one or both ovaries that the function is disturbed. Again we see intimate ovarian sympathy in diseased conditions of the uterus, developing into well-marked ovarian irritation, resulting often in, first, a congested and tender ovary, then the next stage of inflammation and enlargement. The experience of all gynæcologists is, that these are the most difficult cases to relieve, and that permanent relief does not come until the woman safely passes through the second critical period of her life. The fact that some women have perfect ovulation and never menstruate, also that others only menstruate during pregnancy, has been proven, and would seem to argue in favor of independence of these two functions. But the evidence pointing to ovarian influence in its establishment and perpetuation is overwhelming. Adopting this view will enable us to account for the morbid condition which we find to exist in many diseased conditions of this function.

As to the general condition of the woman during the period: Immediately preceding it, there is a sense of lassitude, disinclination for society, a feeling of weakness about the loins, and tension and fulness in the hypogastric region, and some mucous discharge from the vagina. The flow now becomes established, and by the second day these uncomfortable feelings pass away. *The duration of the flow is from three to six days. The quantity of blood discharged is to be measured by the number of napkins used, an average of from four to six.* The exact time, and the number of napkins required, depend upon the habit of the person; some women, it is easy to understand, being of a more sanguine temperament, of a more plethoric habit than others. Anything in excess of these rules, however, denotes that the physiological function has passed into a pathological condition. It may be only temporary, and nature may be sufficient to re-establish a normal condition of affairs before the next period returns, but experience does not often demonstrate that this is the case.

The frequency of return of the period depends in a measure upon climate and individual peculiarity. About every twenty-eight days, however, is the average; in other words, a woman should be unwell thirteen times in a year. The physician should instruct his patient, or the mothers, how to teach the daughters when to expect its return. In the expe-

rience of the writer, ignorance of this very fact frequently finds the patient guilty of imprudence in the matter of exposure or over-exertion on the eve of a period which lays the foundation of menstrual disorders, which result in certainly much suffering to the patient, and not infrequently the development of uterine disease, requiring persevering and systematic treatment for its cure.

How often are we called upon to remedy ills produced by the ignorance or inattention of mothers. The girl just arrived at the most important period of her physical being, her whole system undergoing a change, not understanding the problem of her being, now seeking a proper and healthful solution, is allowed to be guilty of such criminal neglect of her health as plunging her feet into cold water, exposing herself to draughts, improper clothing, thin shoes, undue dissipation, irrespective of the impending period, or the fact that the flow has begun. Ambitious parents, wishing their daughters to shine in society, to be intellectually brilliant, push their mental development at the expense of the physical. Too close application to their books draws off the nervous force that should at the time of the period be expended on the uterine system, and the wheels of nature are there by clogged and retarded. The proper and thorough establishment of the menstrual function is interfered with. The girl grows into full womanhood, an adept at letters, but unfit and

incompetent for the sphere in life for which as a woman she was destined. Health has been undermined; she is a victim to dysmenorrhœa and ovarian irritation. If she enters the matrimonial state, she is either sterile, or, if she bear children, they are delicate and feeble in constitution, and perish in undue time, the mother often ending her days in a difficult labor. It has been tritely said that "foresight is not as good as hind-sight." How differently would parents act in this respect in the education of their daughters if they could have the light of experience at the time of life when the girls would and could reap the benefit of it. It behooves us as guardians of the public health to utter no uncertain sound in this respect. Prevention is ever better than cure, and if we do our duty fully to our patrons, we shall be enabled not only to prevent much suffering, but as political economists contribute to the building up of a hardier womanhood.*

The practical deduction from these observations is that the mind should not be developed at the expense of the body. *Insist that the girl when she arrives at the age of puberty shall take proper care of herself. Insist that she shall consult health, rather*

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* McKay reports twelve cases where *suppression of the menses was accompanied by disturbance of vision* (the Supplement to *Amer. Jour. Obstet.*, Dec., 1882, p. 370). Hence the importance of searching for the true cause in these cases.

than appearance, in the manner of her clothing and shoeing. Insist that she shall remain at home from school, quiet, during the period. These precautions will repay her a thousandfold when she attains womanhood and finds her physical self perfect in the performance of all of its functions. This condition will be helped by *insisting on regular exercise, and systematic, daily attention to the bowels.*

Menstruation continues for about thirty years. It being established early is no reason for an early cessation, but in some hot countries where it is early established it ceases at an earlier period of life. According to the results obtained by Cohnstein from one hundred cases, the greatest duration of menstruation is found in those women in whom it is early established, marry, have more than three children, nurse them, and have their confinements regularly and at full term up to thirty-eight or forty-two years (quoted by Schrœder, in Ziemssen's Cyclopedia, vol. x. p. 321). While the beginning of menstruation is accompanied by various disturbances, nervous and otherwise, the same is true of the cessation of the function. Baer says (*American Jour. of Obstetrics*, vol. xvii. p. 450): "Where health exists, the cessation of menstruation will be attended by no more aberrations than its establishment." And again: "Those women who suffer at puberty and at the catamenial periods are almost certain to suffer at the menopause, and the cause is

usually found to exist in an imperfectly developed sexual system, and a nervous susceptibility." The exception to this rule will be found to be due to injuries or disease received or caused by parturition or accident, and pathological conditions have been established which have not been relieved when the woman arrives at her climacteric. Under these circumstances the critical period may last many months, or even years. The health may thus be undermined, and other serious maladies may set in as complications to the uterine conditions.

According to Mayer (quoted by Schrœder, "Ziemssen," vol. x. p. 322), the menopause occurs later in the higher walks of life.

Women are too prone to regard every discharge of blood from the genitals as being menstrual, consequently, they still consider themselves as unwell when the process of ovulation has long before ended. The hemorrhage may come from some other cause, general or local: it may be an enfeebled heart, a torpid liver, congestion of the vascular system of the pelvis; it may be due to polypi in the cervix, to fibroids, or to cancerous disease. Cases have been recorded, hard to believe, of conception and child-bearing at a very advanced age.

Now in connection with this part of our subject let us glance for a moment at the physiological act on the part of the uterus in the act of coition.

The importance of this is fully appreciated when the reader is reminded that menstrual disturbance in the married woman is, in a large proportion of cases, due to abuse of the sexual relation on the one hand, or the sexual relation on the other aggravates the uterine disease, in both instances the treatment being of no avail because of the manner in which the uterus acts physiologically during coition.

The fact is this: the uterine neck in a passive condition is of normal elasticity, and the os and canal of the cervix may be more or less patulous. Under the stimulus of sexual excitement, the cervix becomes engorged with blood, and softer, the os expands, and the canal of the cervix dilates so that a sound, which could not be passed into the cavity before, is easily admitted now; at the same time the cervix is thrust forward (sinks deeper in the pelvis), and there is a gasping, sucking action by which the seminal fluid is sucked into the canal of the cervix. So soon as the orgasm ends it returns to its normal condition. Dr. Carpenter ("Human Physiology," p. 895, 8th ed.) says there is little evidence that this is true. Litzmann, however, recorded an observation so long ago as 1846, in which he describes the action of the cervix uteri. In 1872 Dr. Beck described in detail a case confirmatory of Litzmann's observation (Flint's "Physiology," 3d ed. p. 892). Litzmann was followed

by several German writers who confirmed his views in the main, namely, Eichstedt in 1859, Wernick in 1872. Beck had no knowledge of Wernick's paper, and that far was original. Dr. Mundè (*Amer. Jour. of Obstetrics*, 1883, vol. xvi. p. 846) writes as follows: "We ourselves have seen the gushing, almost in jets, of clear viscid mucus from the external os during evident sexual excitement, produced by a rather prolonged digital and specular examination in an erotic woman. The lips of the external os alternately opened and closed, with each gaping emitting clear mucus, until the excitement (which we confess to have intentionally prolonged by gently titillating the cervix with a sound through the Sims' speculum) reached such a height as to cause the woman to sit up on the table and thus end the experiment." Finally, I myself have seen the same condition of things occur more than once. With this array of proof we are forced to conclude that this is the physiological action of the womb during the performance of the sexual act. Now the practical conclusion of the matter is that abuse of the sexual relation, as is frequently the case in the recently married, results almost inevitably in the passing of a physiological state into a pathological condition, inducing disease of the cervix, which may, and if treatment be too long delayed will, extend to the body of the uterus, and we have a condition evolved from an innocuous

physiological act into a lesion which may be obstructive in character, producing dysmenorrhœa, or, it may be, will cause amenorrhœa from the acuteness of the inflammation, or there may be so great engorgement as to end in menorrhagia, or metrorrhagia. Hence the importance of determining the truth of this physiological act, its important remedy being *to forbid strictly and absolutely all communication of the husband and wife, until a cure is effected, and judicious advice, which will prevent any errors in the future.*

CHAPTER III.

AMENORRHŒA.

AMENORRHŒA means absence of the regular monthly flow. It may be temporary in character, due to psychical influences, such as sudden fright, sad news, anxiety, etc. When a woman has reason to dread the occurrence of pregnancy, the period fails to make its appearance, and comes on, only when she is convinced that it is not the case. On the other hand, an eager desire for the occurrence of pregnancy may have the same result, the fear of sterility making the woman look for the period with great mental agitation. Attention has been called to cases of this kind by Parvin,* Raciborski,† and Bohata.‡ These cases are not of frequent occurrence, but are still of great interest. It may be and often is due to conditions which are general and interfere with the general nutrition of the body, such as in wasting diseases, like consumption, anæmia, and chlorosis, and in wasting fevers, such as typhoid. Sometimes it is due to excessive

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* *Amer. Practitioner*, Sep., 1872, and *Boston Gyn. J.*, vii. p. 208.

† *Arch. Gen.*, May, 1865, and loc. cit. p. 576.

‡ *Wein Med. Presse*, 1866, No 31.

corpulence. It may be due to plethora, to torpid liver, or congestion of the portal circulation. The action of the general conditions is to interfere with the process of ovulation; the stimulus is thus lacking. It is a disorder of great frequency among women who lead luxurious lives and thus derange the sanguineous and nervous systems, and so is often found among the members of the higher class of society all over the world. *It is not a disease*, but a symptom of many diseased conditions, as are each and every other of the disorders of menstruation.

We find the girl suffering with chlorosis, has amenorrhœa; the latter does not cause the former but the former condition is the cause of the latter. The subject looks generally unhealthy, the skin of a whitish-green color, lips and tongue pale, the latter often covered with a whitish fur, loss of appetite, and indisposition to exertion, hereditary often in its origin, occurring in those girls who have handed down to them a constitution of lowered vitality—"the gelatinous descendants of albuminous parents," is the phrase which describes them best. The subjects of chlorosis are blue-eyed, fair, face round, but have soft tissues and flabby muscles, and are incapable of much exertion without fatigue. It may be developed by the ordinary contingencies of social life. Hammond (*Journal of Psychological Medicine*) maintains it is an affection

of the nervous system, the blood changes being secondary. There is a diminution of the red-blood corpuscles, and this is the most important change we find. A more elaborate description is not needful here; I refer my readers to a general treatise on the practice of medicine. I wish simply to call attention to it, sufficiently to prevent error, and besides, while amenorrhœa is one of the symptoms, it is not necessarily so. To relieve the amenorrhœa the indication for an improvement of the general condition by ferruginous tonics, strychnia, phosphorus, and arsenic, with properly regulated exercise, diet, and hours of sleep, are the prominent remedies. We would especially emphasize the importance of regular and sufficient repose by sleep, emphatically, here, "nature's sweet restorer."

Plethora may be the cause of amenorrhœa. Excessive congestion of the mucous lining of the uterus is the consequence, and hence there is no flow. This is a condition which is to be remedied by depletion, local, as by cups to the loins, leeches to the vulva, or cervix, or by administration of saline cathartics, so as to diminish the blood-pressure. If it be due to the blood states of phthisis pulmonalis, or Bright's disease, we see in it a conservatism of nature, and these conditions being in themselves incurable, we would be criminal to hasten the end of our patient by bringing

on a flow which would only add by its depletion to the existing prostration.

There may be an atony of the nervous system, from mental depression, indolence, want of fresh air and exercise. There may be the action of some cause which fails to stimulate ovulation and consequently menstruation. Of course it is easy to understand how amenorrhœa may exist when there is absence of the uterus or ovaries, or both congenitally, and how this condition is irremediable. Scanzoni remarks that entire absence of the womb is very rare (quoted by Thomas, p. 637, 5th ed.). Absence of both ovaries is very rare also.

There may be an occlusion of the vagina by an obturator hymen, contraction of the vagina from sloughing, or atresia. Here the amenorrhœa is relative, as the flow is dammed up behind the obstruction. The remedy is plain, namely, the removal, if possible, of the obstruction. We see some cases of amenorrhœa in the young, where there is a discharge of blood from some other organ or part of the body, lasting for three or four days, and then disappearing, as in the following cases, the discharge being *vicarious*.

Case I.—Girl 15 years old, colored, had menstruated once. She looked plethoric and in full health, but her tongue indicated anæmia. She had occasionally headache and pain in her back. Her history showed that once a month she bled from

the nose ; it lasted three or four days. She was put on a pill of sulphate iron, gr. ss.; aloe socot., gr. ijss.; pulv. ergotæ, two-thirds of a grain—to be taken every night. She was not seen again.

Case II.—D. B., colored female, aged 18 years. Began to menstruate at thirteen years old, and the periods appeared regularly for two years, though they were painful. She had suffered from amenorrhœa *for the last three years*, but for the previous *ten months* she had, at intervals of four weeks, a vicarious discharge of blood from the stomach, attended by the following symptoms, viz.: cough, nausea, vomiting of blood (dark in color and clotted), pain in loins extending down the thighs, with a feeling of weight in the hypogastric region, and puffing of the abdomen. This last symptom disappeared so soon as the vomiting began. She was very anæmic, had little or no appetite, and suffered much from headache. Eyes looked dull and heavy, tongue furred, bowels very much constipated. She was given a cathartic and placed on a tonic consisting of iron, quinine, strychnine, and aloes. Period expected first of May. A week before she was ordered ʒ i. tinct. guiacum every night at bedtime, with hot hip-bath. May 7th she had her usual headache, but spit up no blood ; she had more pain in the pelvis than for some time. May 10th she had some bleeding from the nose, with headache. June 15th period came on preceded

by chill, followed by fever, and attended by headache and pain in the back; flow free and copious; no cough or vomiting. July 7th period returned again copiously, lasting seven days. During the treatment of this case an examination per vaginam was made and the womb found slightly retroverted. It was replaced, and kept in place by a properly adjusted pessary. Her lungs had been examined at the outset and found free from disease.

When the monthly discharge has never appeared in a girl who should be unwell regularly it is known as *emansio mensium*. When it is suddenly suppressed, it is known as *suppressio mensium*. Three factors enter into the proper performance of this function: 1st, The uterus and its appendages must be in a normal state; 2d, The blood must be in its normal state; 3d, The nervous system, which preserves the proper balance between the uterus and ovaries, must be unimpaired in tone. An intelligent treatment, therefore, of amenorrhœa involves a preliminary search in each of these three directions for the cause. If it be simply a case of suppressio mensium, the fact that the patient had menstruated normally will help to eliminate any doubt as to the form of these parts being intact. They may one or all be lacking in proper vigor, and this may depend and will depend upon one of the other two essential conditions, for if the blood be impaired, or the nerve stimulus

lacking, it is clear that ovulation will not be properly performed, and if this be defective the resultant physiological congestion will not occur in the mucous membrane of the uterus to furnish material for the flow. But if it be a case of emansio mensium, and the persistent use of well-directed general remedies fail, nothing is left but thorough investigation as to the integrity of the ovaries, uterus, and vagina, including, if possible, the integrity also of the Fallopian tubes, for the trouble may lie here, there having been some disease which has destroyed their function. This latter can only be surmised, for Emmett says we have no means of recognizing salpingitis until after death ("Principles and Practice of Gynæcology," p. 609), and if not this, how are we to discover any other derangement of the tubes? When we find everything else as it should be, we arrive at this conclusion simply by exclusion, and are unable to promise any relief.

Lawson Tait says (p. 25): "I have, therefore, a growing suspicion that we shall find in the monthly movement of the tubes, or in their structures, at any rate, the real source of the monthly discharge from the uterus."

It is important to remember the occurrence of pregnancy as an explanation of amenorrhœa. This may ensue in a woman who has never menstruated, though it is not probable. Its greatest importance

is in the case of those women who, having been regular, have missed the expected period, and great care should be exercised in the investigation, because one may make an error of diagnosis which will result in producing an abortion. The effort on the part of some women to make the medical attendant fall into just such a trap as this is very ingenious, and we may have to endure the mortification of having been out-generalled. The following case illustrates our meaning fully: *Case III.* Miss A. B., who had been known to me since childhood, and in whose virtue I had the utmost confidence, had been the subject of uterine disease and treated successfully for it, applied to me for treatment for the suppression of her period. Of course I had no suspicion of a physiological stoppage, as I believed her above reproach; accordingly I gave her every known remedy to bring on the flow, but without avail. A few months later she applied for examination, saying she had a tumor in her side. The examination revealed her five months pregnant, and she was subsequently delivered. Fortunately my remedies did not bring on a miscarriage, but I can only account for the failure to do so by the fulfilment of the proverb, "Be sure your sin will find you out." So that, no matter who the patient is, investigation should be thorough, and remedies administered with such care that enough time will elapse to eliminate all probability of pregnancy.

Differentiation.—This is very important for the sake of our own reputation, and to avoid being made the innocent instrument of producing an abortion by designing women, who would hide their sin by an additional crime.

"We are," says Dr. Montgomery, "quite justified in adopting as a general rule that in healthy women whose menstruation has been established and continued regular, and who are not nursing, conception is followed by suppression of the menstrual discharge at the next return of the period; but then this suppression may not so occur; and, on the other hand, it may happen from a variety of other causes, not connected with pregnancy." (Hewitt, "Dis. of Women," p. 22, vol. ii.)

Casper (Ibid.) says: "Nothing is easier than for a person who is desirous of simulating pregnancy to declare that menstruation has ceased for such and such a time; and it is only by a favorable accident that an examination is made at the catamenial period, and the imposition discovered." Just the reverse of this is almost as easy, and the woman who wishes to deceive resorts to various devices in order to attain her end, "even staining her linen with blood* to carry out her end." In the experience of all of us we know of how little value cessation of the menses is as a sign of pregnancy,

* Hewitt, "Dis. of Women," vol. ii. p. 23.

unless corroborated by other symptoms. I have always laid great stress on the fact that the last period was normal, and when the time for the reappearance came there was no sensation of discomfort, especially *headache*, or fulness about the head. There may be in the beginning of pregnancy as an evidence of its existence, from an increased richness of the blood, *absence* of general malaise. I remember full well that the period *may be* absent for several months in the newly married, as the result of the new condition in life, without any other evidence of pregnancy. But in those who have been for some time married, and for those who unblushingly come to us with criminal intent, the rule I have laid down holds good far enough to put us on our guard, and leads to investigate further before prescribing. Again, we are liable to fall into error after a woman has attained forty years of age, and approaches the climacteric. We can only search for the other early symptoms of pregnancy, such as enlargement of the breasts, and especially of the papillæ around the nipples, vesical irritation, dyspeptic symptoms, ballotment, etc. The vaginal touch I consider of importance, as I have often found in the earlier weeks of pregnancy the neck of the womb decidedly softer to the touch and of velvety feel, womb lower in the pelvis and more globular. Another symptom of value as a link in the chain is the abnormal craving for certain articles of

food, called by women *longings*, morning sickness, sudden and unaccountable syncope, pain or tenderness in the breast. If a specular examination be made, the vaginal mucous membrane will be found of a deep violet color, the os more oval and patulous, and the cervix bathed in a thick creamy mucus. If the enlargement of the womb is due to the existence of a fibroid, cancerous disease, simple congestion, or hypertrophy, there would be menorrhagia instead of amenorrhœa. Still the existence of tumors has deceived the best men, and pregnancy has been diagnosed. The placental souffle, and the sounds of the fœtal heart, heard after the fifth month, are the signs to be most relied on, taken in connection with the progressive enlargement. In unmarried women we should be especially guarded in our diagnosis, and careful how we express an opinion. It is our most sacred trust to guard the character and virtue of woman. At the same time we must not forget that our reputation is at stake, and will suffer if we make a mistake. If pregnancy be the conclusion at which we arrive, both the woman and our own reputation should be defended by having the diagnosis confirmed by a brother practitioner, whose skill and character are such as to enlist the confidence of both parties concerned. Our chief difficulty will lie with those cases at the close of menstrual life, and with women who are anxious to have offspring. "In some rare cases

women have been known to present the peculiarity of not conceiving until after three or four months' previous suppression. Again, pregnancy *may* occur at a somewhat advanced period of life, and when the menstrual phenomena have altogether ceased" (Hewitt, "Dis. of Women," vol. ii. p. 23). To sum up the whole matter, it is only safe *never* to take the *absence of the menses* as a sign of pregnancy, unless fully corroborated by other signs. Its value is to point us in that direction and to give us the starting-point in investigation.

Another fact to be borne in mind is that the menopause may come very early in life. Tait reports two cases as early as the 21st year, one at 24 years, one at 26 years, three at 27 years, two at 28 years, one at 29 years, eleven at 30 years, etc., and a total of fifty-six before the thirty-fifth year. These cases were found in London and Paris. They must form their own commentary.

Local Causes.—In the preceding pages the conditions which I have considered, and upon which many cases of amenorrhœa depend, have been those in which the general system is involved. But my experience recalls the possibility that there may be suppression of the monthly flow from causes strictly local, and no doubt such experience has fallen also to the lot of every man of large experience in the treatment of the diseases of women. The fact that amenorrhœa is usually due to some constitutional

cause may often make us overlook the local condition, therefore we must be on our guard not to fall into an error of diagnosis, by simple forgetfulness that the absence of the period is due to a local condition. The simplest of these may be an endometritis, or metritis, or pelvic peritonitis, or atrophy of one or both ovaries, cystic degeneration of one or both ovaries. The following case illustrates the first of these conditions:

Case IV.—Mrs. B., married, aged 25, applied for treatment for suppression of her courses. She is a woman of full habit, general health perfect. Had had one child, born prematurely at sixth month, and case badly managed at that time by attending physician. Examination by touch and speculum revealed uterus too low in the pelvis, slightly enlarged cervix, abrasion of the os uteri and vaginal portion of the cervix, and well-marked general endometritis, leucorrhœa profuse. Courses at best irregular, and usually entirely suppressed. Appropriate treatment for a few months relieved all of these symptoms. She in due time went to full term and was happily delivered of a boy, and at the time of the present writing is a third time pregnant.

Amenorrhœa may be due to adhesion of the walls of the uterine cavity, and possibly complicated by atresia of the vagina, the result of instrumental labor. We quote in part a case reported by Dr.

Robert Battey ("Trans. 9th Annual Sess. of the Medical Society of Va.," p. 432). It illustrates this condition of things, and is one of many monuments to the genius and skill of a man to whom modern gynæcology owes much, and of whom his Southern medical brethren at least are justly proud.

Battey's Case.—In February, 1876, he was consulted by letter in reference to the case of Mrs. H., married, 33 years old, one still-born child. Her physician, Dr. J. W. Bennett, of Brookhaven, Miss., stated that, "twelve years before, she was injured in giving birth to her first and only child, by delay and the use of instruments. The result was entire occlusion of the vaginal canal. Eminent surgeons of the city of New Orleans had twice attempted by dissections to remove the obstruction to the menstrual discharges, but failed. . . . . The patient stated that menstruation *had never been visible* from the time of her first conception. Dr. Bennett thought her correct, "though the molimen, or monthly struggle, was regular all the time." She suffered with "nearly all that is common to dysmenorrhœa, such as pain and tenderness in the ovaries, darting pains everywhere, hysteria with sobs and crys of agony, with hopeless despondency, etc., etc." Dr. Battey removed both ovaries with entire relief to the patient and her subsequent restoration to health. I am unable to tell from Dr. Battey's report whether he considers it a case of dysmen-

orrhœa or suppressio mensium; but as no discharge of menstrual blood had been seen since the time of her conception, I have thought fitting to record it here.

Treatment.—All effort directed simply to the relief of amenorrhœa *per se* must be empirical, because it is only a symptom of some condition, and for perfect restoration of the function to its normal state, the morbid cause must be sought out and relieved. If the amenorrhœa be due to obstruction of any kind, the obstruction must be removed by the appropriate surgical procedure. If the uterus be congenitally absent, the distressing symptoms at the molimen must be relieved by general venesection from the arm, or the local abstraction by cups from the loins. But since Lawson Tait and others have demonstrated that the peritoneal cavity may be invaded now with so little risk, the remedy, *par excellence*, in this condition is normal ovariotomy, to at once put an end to all return of a molimen.

Galvanism is the most approved remedy for the development of a rudimentary uterus or ovaries, or both, should these be the cause; dilatation, by tents, of the uterus to increase its nutrition, and the wearing of a galvanic pessary in the intervals, with general tonic treatment. Persistent treatment of this kind may restore or develop the uterus to its normal size, and thus by sympathetic stimulation of the ovaries also, cause a return of menstruation; but

often it is necessary that this treatment be patiently pushed for months, or even years.

Where due to any diseased condition of the uterus, the rational indication for restoration of the function is the cure of the pathological condition upon which it depends.

If atony of the nervous system be the condition, resort must be had to such tonics as iron, strychnia, phosphorus, arsenic, chloride of gold, and sodium. The diet should be liberal and nutritious; malt and alcoholic stimulants, living in the open air, in fine, every resource should be adopted which tends to restore the nervous system to a healthy tone and build up the constitution. If it be impossible to content the patient at home, she may be placed in some hydropathic establishment, or in some hospital such as Dr. Mitchell's in Philadelphia, where she may be subjected to the massage treatment, together with its adjuvants, electricity and a judiciously regulated regimen of diet and rest. "When there is in young girls delayed or difficult menstruation, a summer at the sea-shore will sometimes correct the difficulty altogether. Exposure to the sun's rays seems to have a good deal to do with the result in all these cases, in accordance with well-known hygienic observations" (Dr. Packard, "Sea Air and Sea-Bathing," p. 75). The influence of a sea voyage on the function of menstruation is well known. Often it precipitates a period in those who

are regular, and this being the case much benefit may be hoped for those cases of amenorrhœa now under consideration.

So far as exercise is concerned, it is to be remembered that it is to be taken in such a way as not to debilitate the patient. If the woman be in an enfeebled condition, much exercise makes too great a demand upon her nervous system, and does harm rather than good. Besides this, the muscular power is enfeebled by being supplied with an anæmic blood. In order that the patient may have the benefit of fresh air and a passive exercise not open to the above objections, driving in a carriage, or going upon the water in a row- or sail-boat, is to be recommended. There should be, too, gentle and well-directed mental exercise to obviate the natural mental depression. Infinite care must be taken not to overtax the physical or mental powers. The exercise of every description must be of that tentative character which will prevent mischief.

As to diet, it should be of the most concentrated, nutritious character—milk, poultry, beefsteak, mutton-chops, or well-roasted mutton. Wine such as claret (a claret made in Virginia is very good and very beneficial in these cases; it is more like a Burgundy than claret) or sherry may be allowed with the meals, or beer, or whiskey, if the patient prefers. One of the best means of concentrated

nourishment and stimulation is by a milk-punch taken at bed-time every night.

If the patient's appetite be bad, meat juice (Valentine's, or Johnston's meat ext.) may be given at regular intervals. Wine-whey, etc., anything which is light, nutritious, and digestible, may be taken. Early hours, regular rest, proper ventilation of sleeping apartments, wearing clothing suspended by braces or straps from the shoulders so as not to drag on the waist and hips, is of the first importance. Flannel should be worn from the neck to the heels, and every precaution taken to prevent the patient's taking cold. A tepid or warm bath, followed by friction with a coarse towel, will be of great service in improving the condition of the circulation. As before recommended, sea-bathing in summer will be of great benefit.

We must now turn to a consideration of the appropriate remedies directed especially to the uterine system for the restoration or establishment of the menstrual function. Like many other of the disorders to which flesh is heir, often the simplest remedies will suffice to relieve the difficulty.

These remedies consist of two classes: those general remedies for the improvement of the general health that we have just considered in the preceding pages, and those remedies to be used at the time of the expected molimen. To one or two of the medicines recommended we must again refer

more especially. *Iron* in some form is probably the most valuable remedy we have for the relief of amenorrhœa. Why? Because it adds to the richness of the blood, increases the number and improves the quality of the blood-corpuscles. A better blood circulating through the various tissues of the body adds directly to the re-establishment of health by its corroborant effect. This is eminently true of the muscular system in general, and of the uterus in particular. Innervation is improved, and an improvement in nervous tone tends to stimulate healthy ovulation, and thus the menstrual flow is brought on healthfully and physiologically. But the iron must not be administered while the system is in a state of irritation, and there is some febrile reaction, as in extreme cases of anæmia. It must be preceded by some saline mixture, as liquor ammoniæ acetat. (freshly prepared) with nitrate of potash, and its efficacy will be increased by the addition of some one of the bitter tonics, as columbo, gentian, or tinct. of cinchona. Iron, to be most efficient, must be given in such a form as to be most easily assimilated — the ammonio-citrate of iron and quinine, or the dialyzed iron, or the ferri redactum, syrup of the pyrophosphate of iron; strychnia and arsenic in combination with it will add much to its efficiency. I am very fond of the two following formulas:

℞. Tinct. Ferri Chlor..... ℥ i
Liq. Chlor. Arsenici..... ʒ ij
Strychniæ..... gr. i
M. Sig. gtt. xx. ter in die—after meals in water.

℞. Tinct. Ferri Chlor..... ℥ ss
Acid. Muriatic dil..... ʒ iij
Liq. Chlor. Arsenici..... ʒ ij
Hydr. Bichloridi..... gr. i
Syr. Zingiberis..... ℥ ij
Aquæ.....Ad. ℥ vi
M. Sig. Take a teaspoonful in one-third of a tumbler of water three times a day after meals.

This is a modification of Dr. Goodell's formula ("Lessons in Gynæcology," p. 100), which he calls the four chlorides. It is given in a smaller dose than he directs, because in my experience more than a teaspoonful tends to cause heartburn. I can testify to its value as a chalybeate tonic. Chalybeate water is a good form in which the patient can take iron—especially if drunk at one of the summer resorts, for the fresh, bracing air of the mountains is a most admirable adjuvant.

The treatment at the time of the period should consist *always* of rest and quiet. This is especially important where the flow has been suspended because of some mental or psychological influence. Electricity may be applied at this time with benefit, one pole of the battery being placed over the sacrum, and one over the hypogastric region, or one may be put over either ovary. It is my cus-

tom to order a hot sitz-bath, with salt and mustard, morning and evening, for three or four days before the expected period, and to give internally the fld. ex. viburnum prunifolium, ʒ i., every four hours, beginning a day or two before, and pushing it for two or three days—unless it causes headache, as it sometimes does. *Apiol* (the most important constituent of petroselinum sativum) has decided emmenagogue properties. It is a stimulant to the uterine system, and therefore is indicated in the *amenorrhœa of anæmia*. The bowels should be well opened by a purgative of aloes, and then the apiol given in doses of fifteen grains in capsules (a large dose) at the time of the molimen or just before. If the case be obstinate it may be given daily for a week before (Bartholow, "Mat. Med. and Thera.," p. 677, 5th ed.); *Hydropiper, Fld. Ext. of*, thirty minims four times a day for a week before the expected period. Bartholow ("Mat. Med. and Thera.," 5th ed. p. 678) says he can confirm the statement of Eberle, who reports, "with no other remedy or treatment has he been so successful as this," in amenorrhœa. Ol. savine; rue; ext. or decoction of aloes; tinct. cannabis indica; iodine, tinct. of; turpentine; cantharides; guiacum; mustard; are remedies which have been and are used, and with more or less benefit singly or in combination. Dr. Gamberini speaks highly of the volatile oil of celery (*Lancet*, Feb. 1, 1872). "Menstruation has been induced

by compressing the femoral arteries (Edis, p. 464) by means of tourniquets." Besides constitutional means, we have to resort also to local remedies. In the unmarried, however, and especially in young girls, a vaginal examination is rarely justifiable.

The means at our command for local treatment are many and varied. A hot vaginal douche of water impregnated with salt tends to produce determination of blood to the uterus. Electricity may be applied to the neck of the uterus, or the ovaries stimulated by placing one electrode in the vagina and the other in the hypogastrium or either iliac region, alternating it from one side to the other, and immediately over the uterus.

The cervical canal may be dilated by laminaria or sponge tents, or rapidly by steel sounds, and the uterine mucous membrane stimulated by the application of tinct. of iodine to it, once or twice a week. Stimulation of the mucous membrane in this way may react on the ovaries, and excite them to the better performance of their function. Dry cupping the cervix may be of service, and stimulating enemata also. Dr. T. Gaillard Thomas, of New York, has designed an electric stem-pessary to be worn for the purpose of keeping up the stimulation to the uterus by a mild current of electricity. It consists of beads alternately of copper and zinc, held together by a small wire rope, secured at the top and to a disc at the bottom, globular in form,

so that it can be held between the branches of a Hodge or Smith pessary (Thomas, "Dis. of Women," 5th ed. p. 641).

We have a variety of cases in which, from fatigue, exposure to cold, mental impressions sudden and startling, or some such like cause, the period is suddenly arrested. This is due to some previous depression as a predisposing condition, the sexual system being rendered too feeble to resist the shock, which is expended on the sexual ganglia. In perfect health these ganglia contain a certain amount of reserve force, only a part of the stimulus being sent out at a time to supply the demand.

When this accident occurs the patient should have a hot foot-bath, be put in bed, hot fomentations or a turpentine stupe applied to the hypogastrium; hot drinks, such as pepper-tea, brandy, or gin and hot water, be given. Patient may take a mercurial and aloetic purgative, followed by a full dose (gr. x.) of quinia and Dover's powder; these remedies will frequently suffice to restore the flow. If it does not return, the approach of the next period should be carefully watched, and such active treatment adopted as will relieve the trouble and restore the function to its normal physiological condition. Much suffering frequently attends a sudden suppression of this sort, and resort must then be had to the hypodermic injection of morphia. The combination

of atropia with the morphia will add very much to its efficacy. Sometimes the suppression differs from this in that while it may have occurred suddenly from one of the causes above cited, yet it persists for a longer or shorter time, all of the symptoms of the molimen being present, but no show of blood. The cases suffer acutely, especially from hysterical nervous symptoms. Dr. R. Z. Leeds (*Amer. Jour. Med. Sciences*, vol. lxiv. p. 288) reports a case which so well illustrates this variety of the trouble and the hypodermic treatment above advised that we quote it in full:

"*Case V.*—Miss I. F., æt. 18, has suffered from suppressio mensium at almost every period since puberty; often becoming delirious, biting her hands and raving in such a manner as to require force to restrain her from committing acts of violence. First menstruated at the age of 13; is very plethoric; weight one hundred and seventy-five pounds; accustomed to much exercise. The menses occur regularly, but nearly always cease after the first day or two, when she is seized with rigors, followed by pyrexia each day, until the time of menstruation is passed. Her mind has been affected seriously by this return each month. Believing that amenorrhœa is not a disease, but a symptom of some local or general disease, we have treated her accordingly with iron, quinia, strychnia, etc., without much benefit.

"*Feb.* 3*d.* Last night she had scarcely any sleep, but is more quiet this morning. At 3 o'clock, P.M., had appreciable rigors, followed by fever. I saw her at five o'clock; she was then unconscious and raving; pulse 98, respiration 16. I injected at the insertion of the detoid eight minims of Dr. Bartholow's solution of morphia and atropia (morphia, gr. xvi.; atropia, gr. ij.; aqua, dist. ℥ i.). Eight minims of this solution contains about one-thirtieth of a grain of sulphate of atropia, and one-sixth of a grain of the sulphate of morphia. In fifteen minutes after the injection the patient became quiet; in thirty minutes was sleeping heavily. The pulse rate began to rise, and in three-quarters of an hour from the administration it was one hundred and sixteen; at the same time the respiration had fallen to twelve. Two hours from giving the injection respiration and circulation had become nearly normal. The patient had a good night's sleep, and has had no return of the paroxysms since. In this case I think venesection would have been more effectual. By bleeding every month, between the menstrual epochs, I doubt not this periodical trouble would have been averted, but blood-letting is so undeservedly unpopular under any circumstances, that patients are unwilling to submit to it."

In conclusion, we would urge the importance of as prompt a relief of this perversion of function as possible, because no matter what may be the remote

cause, the tendency is to reaction on the uterus and ovaries, causing or aggravating uterine disease. Ovarian irritation is established, and as each period passes without making its appearance, more difficult it is to re-establish the function, and the woman relapses into a condition of chronic invalidism, life becomes a burden to the patient, and she herself a source of intolerable annoyance to both friends and physician. Let me therefore again enforce the importance of a thorough investigation into the cause, and the administration of prompt and efficient remedies for its relief.

CHAPTER IV.

MENORRHAGIA.—METRORRHAGIA.

Of all the troubles which we are called upon to relieve, perhaps none cause us more anxiety or greater trouble, or more fully prove the skill of the gynæcologist in treatment, than hemorrhage from the womb. This is especially true, because this affection may be a symptom of so many conditions, and the time of life at which it occurs has, too, an important bearing on the treatment. In some cases, after the most diligent investigation, the impossibility of finding the cause, and the consequent resort necessarily to empirical treatment, has not a little to do with our anxious observation and management of the cases.

The terms menorrhagia and metrorrhagia are used to describe the same condition of things at different periods, and some difference in degree. Menorrhagia means an excessive discharge of blood at the regular period. Metrorrhagia describes the keeping up of the flow during the interval, copious in character, not necessarily associated with menstruation, and occurring in such a manner as to destroy the regularity of the period.

Causes.—A full understanding of the pathology of menorrhagia or metrorrhagia, both of these conditions being symptoms, and not a disease *per se*, is necessarily embraced in a study of the causes. These causes are divided by Emmett ("Principles and Practice of Gynæcology," 3d ed. p. 167) into "Constitutional defects, associated with anæmia; obstruction to the circulation, in consequence of disease elsewhere; local causes, confined to the uterus." We may with advantage make a classification of our own, merely by elaborating these causes:

Constitutional defects, associated with anæmia.	Scorbutus. Malaria. Chlorosis. Fevers. Spanæmia, from uræmia or other grave constitutional disease.
Obstruction to the circulation, in consequence of disease elsewhere.	Disease of the heart. Disease of the liver. Disease of the kidneys. Disease of the spleen. General plethora. Fecal impaction. Varicose veins of lower extremities. Chronic ovaritis. Growths external to uterus and independent of it, situated in the pelvis.
Local causes, confined to the uterus, which may include those causes which produce congestion of the uterus, and those conditions which involve a solution of continuity of tissue.	Subinvolution. Fibroids. Displacements. Laceration of the cervix. Ulceration. Granular erosion or degeneration. Cancer.

Local causes, confined to the uterus, which may include those causes which produce congestion of the uterus, and those conditions which involve a solution of continuity of tissue.	Sarcoma. Polypi. Fungous growths. Adhering products of conception. Extra uterine pregnancy.

At the risk of being accused of being too prolix we will now proceed to scan closely every cause. Let it be fully understood at the outset what constitutes excess. The effect of the loss of blood on the general system should be the standard upon which to reach a conclusion, the loss of a small amount of blood in one individual being attended by more serious consequences than a great deal in another. Some women are of a much fuller habit than others, and accustomed to flow more within the limit of health. But while it is important to remember these general facts, we must have a guide. Dr. Sims defines as normal menstruation "a necessity for change of three or four napkins in twenty-four hours. If seven or eight be needed it is profuse; if a dozen or more, then it may be called a menorrhagia." Thus we have a standard. There are two critical periods in every woman's life—the age of puberty, and the menopause. The source of danger is the sexual system. The system of the girl may have been overtaxed by too close application at school—she may have taken cold, resulting in a congestion of the uterus. There may be emotional causes at work which impair her general health. An attempt

to establish the menstrual function is inaugurated. In the one case, the blood being poor, the hemorrhage is excessive; a loss is sustained which the system is not prepared for. Debility ensues and the anæmia is increased; the girl looks pale and bloodless. If it results from cold, it is an effort on the part of nature to relieve the congested womb; but she goes too far, and the condition becomes pathological. Where emotional causes are at work the nervous system sometimes gives way and we have insanity resulting. Noble words are those written by Lawson Tait ("Dis. of Women," 2 ed. p. 91). He says: "On the accession of those feelings of vague uneasiness or positive pain to which the name *molimena* has been given, we frequently find instances in which the dormant tendency to mental disease becomes roused into action, and acute mania forms one of the risks, through which many young women have to pass at the period of puberty. In these cases great distress is sometimes caused by the terrible form taken by the insanity—erotomania; and I have several times seen girls so afflicted indulge in gestures and language which puzzled us to guess how the patients became acquainted with them, the girls were so young and had been so well brought up. As soon as any symptoms of sexual eccentricity develop themselves in a girl at the molimenal period, she must be treated as insane; and I hold this view is really the best and safest explanation

of many cases of what looks like mere lust, and what is usually and unfortunately punished as a moral offence. It must be borne in mind * * * * that in the descent of the whole scheme of creation the function of reproduction has been the field of the keenest and most unremitting struggle for existence; and at the time of the physiological change which enables the young animal to enter upon that dangerous battlefield, the tendency of his or her ancestry is almost sure to evince itself in one or other form; and any error in this direction is to be held as not the fault of the individual but his or her misfortune. *The true preventive consists in what I believe to be the duty of every parent to give to every child: instruction in the nature and purport of sexual functions, how they are to be used, and how easily they may be abused. If this were done, we should not only diminish sexual diseases, but we should greatly diminish sexual immoralities.*" (Italics ours.)

Where a woman is badly nourished; scorbutic from any cause, or where a condition of anæmia has been induced by overnursing, she is liable to suffer from menorrhagia. As a result of this latter condition her whole muscular system becomes flabby, the uterus coming in for its share of the loss of tonicity, and the condition becomes metrorrhagic because the loss of blood has reacted on the general system and produced a still lower condition of vitality. But menorrhagia or metrorrhagia occurring from

anæmia when some lowering influence has been at work must not be confounded with the same trouble occurring at the menopause, when the rule is for it to be due to some local trouble, and then the anæmia is secondary, not the cause.

The occurrence of menorrhagia from constitutional causes is to be found in early life, from local causes at the menopause—at least this is a good general rule. Malaria may be the cause—its depressant effect on the nervous system, its tendency to cause enlargement of the liver, with consequent engorgement of the portal circulation. Enlargement of the spleen, or disease of the kidneys, may react on the uterus and make the flow excessive. It may be due to defective nutrition of the uterine blood-vessels, as a result of the malarial poisoning; the toxic influence of the various exanthemata—measles, scarlet-fever, small-pox, yellow-fever, etc. We sometimes see excessive uterine hemorrhage during the prevalence of an attack of typhoid fever. But these must be considered only as conditions which have depressed the vital energies to a low standard, and in that way have brought about the menorrhagia. No one of them can be considered in any other light than as predisposing in this way to menorrhagia.

Some women after having borne several children tend to an increase of adipose tissue, and scanty menstruation ensues. *Per contra*, a condition of

menorrhagia may be established; when this is the case it may be regarded as a safety-valve to shield the individual from the ill effects of plethora.

The first period is sometimes excessive. Dr. Mathews Duncan says he saw a case of this kind which came near proving fatal. Subsequently the periods have been normal.

In the newly married, the abuse of the sexual relation may be a cause. The husband comes to his medical adviser, saying, that his wife is losing an excessive amount of blood. Inspection reveals solution of continuity of tissue somewhere.

Often we find the neck of the uterus engorged and abraided. Sometimes the hemorrhage comes from laceration of the vaginal wall, or an inflamed or intensely congested condition of the little vaginal caruncles. It is a shame to the male sex that in the marriage relation, which should be simply the exponent of a pure and holy affection, selfishness and an uncontrollable desire for mere animal gratification makes some husbands rough almost to brutality in the performance of the sexual act, and the man, considerate of his wife in most other things, in this, the most important relation of the married state, not only exhibits, but soon cultivates, the grosser elements of the passion. I would ask my brethren if it is not their experience to have had often sympathy sought by an indirect admission of this fact from some too submissive wife, who finds

out when too late that the man she loves with a pure and elevated affection, is of so gross a nature that he holds her

> "When his passion shall have spent its novel force,
> Something better than his dog, a little dearer than his horse."

Now, in consequence of the above constitutional defects in which, and as a result of which, there is more or less anæmia, the system is in a condition for the development of organic disease of some vital organ. Especially are the secretory and excretory organs liable to suffer. Derangement of the circulation in the kidney, for instance, may be the starting-point for Bright's disease, or there may be some condition set up which will most disastrously manifest itself in the shape of uræmic poisoning. Menorrhagia may be caused by this condition of things, and it is easy to understand how unfavorable would be the prognosis.

Obstructive disease of the heart, such as any muscular condition which causes it to fail in action of sufficient energy to keep up the circulation to the normal standard; or where the heart-muscle is intact and there is insufficiency of the valves, causing regurgitation; or constriction, producing in the arterial system a condition of ischæmia; or many other conditions, too numerous to mention, may derange the circulation to such an extent, as to produce a metrorrhagic condition, which, reacting on

the circulation, tends to still further lower the vital energies. Disease of the liver, if only simply torpor, producing temporary portal engorgement, may act as a transient agent, manifesting the morbid phenomenon by a loss of blood through the generative system. The remedy here is plain and simple: free purgation by cholagogue cathartics.

Splenic disease may bring about the disorder under discussion in some other way. It being the organ engaged, as is now supposed, in elaborating some of the blood-elements, and a diverticulum or receiver for surplus blood needed in certain conditions, when diseased, either functionally or organic, interferes with the balance in the circulation, and the depraved condition of the blood and deranged condition of the system readily manifests itself through that organ, which, by a physiological process, is accustomed to a periodic discharge of blood, and we have a healthy process converted into a symptom which, sufficiently sounded, points to the pathological condition of which it here becomes a symptom. A fact germain to the above conditions, is that in all of them, loss of blood from some organ is predisposed by a deranged condition of these organs, and the one elected is governed by various exciting factors.

Loss of blood from the uterus as the result of *plethora* may be, indeed is, sanitive, unless it go too far. Careful examination into the existing condi-

tions should be made before remedies to stop the flow are resorted to, because it may so increase the vascular tension that apoplexy might be the result, and thus harm accrue from lack of care by the medical attendant. At the same time, such vigilance should be exercised as will prevent what nature intends as a benefit to the general system resulting in absolute harm.

So prone are women to suffer from constipation that we almost wonder if there does exist in the sex conscientious scruples against a regular evacuation of the bowels. Nor do we rarely find simply a constipated condition, but weeks may have passed time and again without the bowels having been sufficiently opened. Fecal impaction occurring thus becomes by pressure an obstacle to the normal return of blood, and there is consequent derangement of the pelvic circulation. This same condition of things may be brought about by any growth external to, and independent of, the uterus growing from the pelvic walls, or so located in the pelvis as to interfere with the return of blood by pressure. A condition of varicose veins of the lower extremities may tend in the same direction. The veins having lost the tone of their muscular coat cannot sustain the column of blood thrown on them. Circulation is lacking in speed, and thus the pelvic veins lack for their contents the *vis a tergo*, which is to impel in a healthy manner the blood they contain.

Consequently a congestion of such a character is set up in the uterus that it results in hemorrhage.

It is but natural that as the function of menstruation is dependent upon ovarian stimulation that any condition of the ovaries which produces excessive stimulation should result in menorrhagia. Such a condition is that of chronic ovaritis. We refrain from comment on this condition here, and refer our readers to a subsequent chapter for consideration of this trouble more at length.

The local causes, however, are those we are to look for in a large proportion of cases, especially if the woman has borne children, or is on the threshold of, or passing, the menopause. This is especially true because there may be some local lesion, the result of accident in labor; or there may be some one of the numerous maladies which develop at this critical period in a woman's life, and which are suspected by the existence of irregular and excessive hemorrhage. Congestion of the uterine tissue may be due to sub-involution of the womb.

The uterus, during the puerperal month, is in a state of metamorphosis; a process of decay and renewal of its muscular fibres is taking place. Now any cause which stops this process tends to produce congestion, and leaves the womb increased in size and weight, and it naturally, as a consequence, falls to a lower level in the pelvis. No doubt a very common cause of this, if not the most common, is

getting up too early after confinement. This is especially the case in the lower walks of life, and may be necessitated by the fact that the comfort of the family is entirely dependent upon the mother, though it is undoubtedly true that in many cases it is due to habit, and a desire of self-assertion over the attending physician or midwife.

All inflammatory attacks situated in the pelvis are causative, too, of this condition. Other causes may be enumerated, such as mental shocks, suppression of the milk, retention of pieces of placenta, etc.

The prevalent opinion that prolonged lactation prevents conception has an all-important influence, and in all classes of society we see women suffering with menorrhagia, which afterwards develops into a most obstinate metrorrhagia from no other cause than an extreme *laxity* of fibre, brought about by too prolonged lactation. The uterus bleeds to excess simply because it is flabby. It needs contraction and condensation. This is a difficult end to attain, until the muscular tone of the patient is improved. The flooding at the period in some of these cases is truly alarming, requiring the most decided and energetic treatment promptly applied to save the woman's life. No woman should nurse her child, except in rare instances, after the age of fourteen months. Lawson Tait says ("Dis. of Women," 2d ed. p. 65): "Medical advisers should lay it down as a law, that, save under very especial circum-

stances, lactation should cease when the child is nine months old." This is, however, too young in this climate, for the child is too backward in teething, and the difficulty of proper feeding during the time of dentition makes it a dangerous experiment. The following case is in point:

Case IV.—Mrs. McM. was delivered in July, 1883, of a large boy, with instruments. She had been very dropsical for two months prior to confinement, and was threatened with convulsions. When her baby was about six months old, she was suffering from overnursing. Her period returned most profusely, so much so, indeed, as to require tamponing and the administration of ergot with perfect quiet in bed. This was the history of each succeeding period for several months, in spite of tonic and astringent treatment, and the local application during the intermenstrual period of iodine, Battey's solution, and nitric acid, after thorough curetting. As a last resort her womb was fully dilated by sponge tents, and the entire cavity lined with absorbent cotton, soaked in Monsel's solution and water equal parts, and retained by a tampon of dry cotton. This was allowed to remain until it came away spontaneously. The action of the iron on the uterine tissue condensed and hardened it, and she began to improve under the use of tonics. Her next period was normal in every respect, and also the succeeding one.

She then became pregnant and was duly delivered, and has since had no trouble.

A frequent cause of subinvolution is neglect, or lack of prudence, after an abortion or miscarriage, an accident which most women of all classes look upon as a trifle. On the contrary, in my experience, if they would escape subsequent uterine trouble, it is more important to observe quiet and exercise prudence than after labor at full time. This is manifestly true, because when the woman goes to full time she has arrived at that period when the uterus is in its most favorable condition for return to its normal size and density. The womb in a condition of subinvolution is in a favorable state for the development of acute metritis, and the patient should be carefully watched after confinement; and if the lochia after the third week are too profuse, and especially if too red (sometimes it is menorrhagic in character), the patient's condition should be most carefully inquired into and appropriate remedies applied. Failure to do this may result in the development for the patient of a condition of chronic invalidism. It is plain how this may be the case, because valuable time is lost, and local disease, difficult of (subsequent) removal, is so firmly established. Even more immediately serious consequences may result, and the case assume the gravest character: acute disease, inflammatory in character, may be establishing itself, and timely treatment

turns the current of the morbid process, and simplifies the future management of the case. Care should be exercised, too, in discriminating this trouble from others, which, from the similarity of their symptoms, may be confounded with it. After confinement the monthly period should not return until the eighth or ninth month, if she be nursing, nor until after the second month if she is not. So that we may lay down the rule, that if inquiry elicits the fact that the patient has flowed, regularly or profusely, ever since the child was born, we have just ground to suspect local trouble, and a thorough examination into the condition of the womb should be made *at once*, when subinvolution, or something worse, will be discovered. Examination should be made both with the finger and speculum, and the depth of the womb measured with the probe. The character of the flow also should be inquired into, whether it is red, brown, or like coffee-grounds.

If cancerous disease of the cervix be the cause of the hemorrhage it will be readily detected, and the subinvolution be of little import in comparison. In simple subinvolution the os uteri is patulous, but not enough so to admit the finger; the cervix is enlarged and thickened, and the sound shows the depth of the uterine cavity to be too great. A copious muco-purulent discharge exists between the periods, and is a source of great annoyance to the patient.

The enlargement of the womb may be due to the retention of a piece of placenta, if the woman has recently had a miscarriage. Its prompt removal is followed by a speedy return to health. The os should be well dilated with a tent if it be not patulous enough without it.

To cure this condition, absolute rest in bed and suspension of the marital relation are essential. Vaginal douches of hot salt-water will be found of great benefit in condensing the womb. Care must be taken not to throw any of the fluid into the uterine cavity. Ergot and the iodide of potassium internally will be found of great advantage. In my hands a combination of the tincture of the chloride of iron, tincture nux vomica, and fluid extract of ergot has proven of great value. Mr. Lawson Tait, however, condemns the use of iron, as being decidedly hurtful ("Dis. of Women," p. 67), but says it may be used with great advantage after the uterine condition has been cured. The topical application of glycerine on absorbent cotton, morning and evening, after using the vaginal bath, will not only add much to the comfort of the patient but be of essential service in reducing the volume of the womb.

Fibroids.—A most common cause of uterine hemorrhage; in themselves innocuous, except mechanically, yet frequently are not suspected until an obstinate flooding arouses the suspicion of the gynæcolo-

gist, and minute investigation reveals their presence. They are found situated immediately under the mucous membrane—*the sub-mucous;* developed in the uterine wall—*intra-mural;* or on the outer surface of the womb immediately under the peritoneum—*the sub-serous.* The uterus is very prone to develop fibroid growths, and they are found from the age of puberty to extreme old age, and from the size of a pea to that of the gravid womb at term. They may be pedunculated, or attached by a broad base. My observation leads me to believe that fibroids occur much more frequently in the negro race than in the white, though I have not been able to get any statistics to support me in this conclusion; yet inquiry among leading men of this city proves their experience to coincide with my own.

Dr. Goodell bears testimony to the greater frequency in the colored race, and speaks of it as a curious fact that fibroids are to "be found in a majority of middle-aged colored women, but—what is rare in white—often enough in black and mulatto girls barely over twenty years of age" ("Lessons in Gynæcology," p. 230). Dr. Robert Battey, in a private letter to me on the subject, says: "I rarely examine a colored woman 35 years of age and upwards, that I do not find a fibroid of more or less size. *Large fibroids* are common with them in middle life. Another fact of my personal observation, I find among the white women of the South three

cases, *at least*, of large uterine fibroids to where I see one of ovarian tumor. I think I can say that uterine fibroids are much more common among the whites in the South than they are in the North. I know that they are very much (ten to one) more common among the black race." If the above be true, and I believe it is, can there be anything in the race which predisposes to this variety of disease, or in their habits or conditions of life? So far as the sexual relation is concerned, they are more passionate, approach much nearer the brute creation, and have greater moral obtuseness as to promiscuous sexual indulgence than the white race, the latter being upon a higher plane of cultivation and refinement.

The parenchyma of the uterus is liable to undergo a localized hypertrophy, resulting in the common fibrous tumor, and the rare form fibro-cystic. Various names have been given these growths by many pathologists. Virchow calls them fibro-myoma, and possibly it is the name which most accurately describes their nature.

Fibroids are developed from an increase in the local nutrition of some portion of the uterine walls, from which results a hyperplasia of the muscular fibres of the womb. This takes place from an independent cell-growth in the tumor itself. In its early stages it is soft, but as it attains some age there is an elaboration of its connective tissue and it be-

comes hard. They are encapsuled,* and resistant to the knife when cut into, but slightly vascular and of little vitality. The time most favorable for their development is during the child-bearing period. Hence this is supposed to stand in a somewhat causative relation; but of this there is some doubt. The constantly recurring congestion from uninterrupted menstruation has been suggested as a cause—the congestions of dysmenorrhœas, inflammations left after abortions, celibacy, etc. But of only one thing are we certain, and that is that the causes of uterine fibroids are as yet veiled in obscurity. We have the pathological condition complete, but it remains yet to penetrate and describe the exact pathological process by which it is brought about. Could this obscurity be cleared up, what light might flow in upon us, as to the most judicious management of the many troublesome symptoms which arise. In-

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* Dr. Emmett denies that fibro-myomata are encapsuled. He says ("Prin. and Prac. Gynæcology," 3d ed. p. 542): "When a fibrous tumor is growing rapidly, it certainly cannot then be invested, or isolated, as it were, by a capsule. Such an arrangement could only be conceived after a tumor has ceased to grow. . . . . Experience has taught me that a fibrous tumor, while still increasing in size, cannot be enucleated, as from a capsule. It may be torn out by force from the uterine tissue, but it will be done at the expense of its integrity, since portions of the tumor will be left adherent to the uterus, and healthy uterine tissue will be found on the surface of the tumor." If it be done growing, he continues, it will be condensed to such a point as to be shelled out with a smooth surface, giving the appearance that it had been encapsuled.

deed, the great remedy would be prevention, by aborting the development. Sexual intercourse facilitates the growth of fibroids; it follows as a necessity that it may be a cause of hemorrhage where they exist, from the increased physiological congestion of the uterus as a part of the physiological process of the act. Query—Is it not eminently proper under such circumstances to require the patient to live *absque maribus?*

Now as to the varieties of fibroids, they depend upon the site of the tumor. I have above referred to the localities which give to the fibroid a name, but there may be a degeneration into calcified tissue, forming what is commonly known as uterine stone. This formation or degeneration is exceedingly rare. Dr. J. T. Everett, of Sterling, Ill., says (*Amer. Jour. of Obstetrics*, Oct., 1879, p. 700), that, in a review of the literature since the days of Hippocrates, he finds only fifty-one cases mentioned, and of these only *thirty-three* were well authenticated. To this number I have added one (*Amer. Jour. Obstet.*, Jan., 1881, p. 108). This case was of interest because I had the patient under observation for nine years, when the tumor was first discovered as a small, simple fibro-myoma, until she died. She suffered with aggravated metrorrhagia. The autopsy revealed the calcified fibroid the size of a small cocoanut situated at the fundus uteri. She also had three smaller fibroids—one sub-mucous and two sub-

serous—and the cavity of the womb was found to be extensively ulcerated. I believe that it is probable that this condition of the uterus is a source of most uncontrollable hemorrhage when it is found. Certainly my small experience points that way, and is borne out by the experience of others. When the tumor reaches this condition it has attained its growth, but a condition of uterine irritation is gotten up, under which the patient gradually sinks and dies. Of this condition Emmett says, those tumors which are interstitial receive a smaller supply of blood than either sub-mucous (or sub-serous). It then frequently remains passive, being subjected to long-continued pressure. It becomes very dense in structure, and sometimes undergoes calcareous degeneration. He says also that he has found this calcareous mass in the centre of a second growth, showing where the process has ceased and been again set up. Dr. Emmett quotes Klebs at some length, describing the pathology of these tumors and their mode of development ("Prin. and Prac. of Gynæcology," 3d ed. p. 538, *et seq*). A sub-mucous fibroid, as the result of continued uterine contraction, may be forced out of the womb and sometimes becomes pedunculated. When this takes place it is in the most favorable condition for removal.

Fibrous tumors sometimes undergo disintegration and absorption. This may occur when the tumor has reached such size as to cut off its blood-supply,

when it undergoes disintegration and blood absorption, and in this condition septicæmia is almost certainly to develop. Under the influence of pregnancy, too, it may entirely disappear. Degeneration into sarcoma sometimes takes place, but good authority denies that they ever undergo malignant degeneration. Klebs,* however, believes that where the tumor extends to the mucous surface, carcinomatous disease may develop in fibro-myomata. One other complication, and one which ought to be borne in mind, where hemorrhage occurs, in women suffering from these growths, i.e., the development of an aneurism in or upon the growth; of course the diagnosis is obscure, and the application of a ligature impossible. The only hope of cure is in the complete extirpation of the womb and appendages.

For illustration of menorrhagia or metrorrhagia, as caused by this pathological condition, I feel that I have entered as minutely as was necessary in a work of the scope of this one. For the more extended consideration of this part of our subject I refer our readers to the larger works on gynæcology, only pausing to glance at the diagnosis, and to say a few words as to treatment. Hemorrhage, excessive or irregular, forcing you to search for a cause, proves to be an important factor in the diagnosis of this trouble. Vesical irritation is present; there is a sense of fulness about the pelvis. Digital examina-

* Quoted by Emmett, "P. and P. of Gynæcology," p. 527.

tion, per vaginam, reveals change in the size and position of the uterus. The other aids used in interrogating the uterus may be called up, such as the probe and tents. Care must, however, be exercised in the introduction of the probe, that no injury be done the uterine tissue.

The treatment for control of hemorrhage due to these growths is very simple. The hypodermic injection of ergot or ergotin, or ergot by the mouth, is to be most relied on, and where the hemorrhage is excessive a vaginal tampon may be temporarily used; but I do not regard this latter procedure as being by any means scientific. To tampon a vagina is to subject a woman to much discomfort, and often to pain, and can in no event be curative. The best that can be said of it is, that in some extreme cases we are enabled to gain a little time, until the patient has been brought fully under the influence of the ergot. This should be done by small doses, and long continued use of the remedy; abuse of it can but result in harm. Of course the general health is to be improved as far as possible. In some cases it is possible to effect a cure by removal of the fibroid by Thomas' spoon-saw. I shall again refer to these growths when I come to speak of dysmenorrhœa. I now turn to *Displacements* as a cause of excessive flow.

A little reflection will enable the reader to fully comprehend how, if the uterus be out of position,

there is of necessity distortion and derangement of the blood-vessels supplying the organ; how from pressure on the pelvic plexus of veins, congestions and subsequent inflammations of the uterus may be set up. Nature demands relief from this condition, and being inadequate to obtain it by restoring the uterus to its proper position, it finds necessarily an outlet through the uterine mucous membrane, and we have first a menorrhagia established, and, if the derangement continues unrelieved, a metrorrhagic condition is set up. Nature's effort at cure eventually results in a pathological lesion.

When the supports of the womb are remembered to be only ligamentous, and so arranged that a very slight cause,—such as a sudden jar or temporary congestion, adding to its weight, etc.,—may retrovert or retroflex the womb, produce anterior displacement or prolapsus, it makes it the more imperative to search carefully into the cause in every case of uterine hemorrhage. I would not be misunderstood as laying down any rule. I do not mean that a sudden or recent displacement is productive of menorrhagia or metrorrhagia. Of course not; but simply, that the organ, having been displaced, *may have its blood-supply so affected that the resulting congestion or inflammation from a* NEGLECTED *displacement may be the cause of excessive flow, hemorrhage which is uncontrollable until the organ is reposited and kept in place.* Dr. Wilhoft most aptly expresses the

true position as to treatment of misplacements by the application of pessaries, and confirms my own experience. He says (*Amer. Jour. Obstet.*, Oct., 1879, p. 676): "Has this attention to, or rather study of, displacements generally been conducted in the proper direction? I am inclined to think not. As long as we speak of Hodge's, Thomas', Cutter's, etc., pessary, instead of certain principles which are based upon *thorough anatomical, physiological, and clinical research, we tacitly admit that we have no settled points in the mechanical treatment of displacements.* (Italics mine.) We know very well that there are not two cases of displacement alike; but that should not prevent us from applying certain principles of practice, good for all, to each individual case, with modifications, which apply to the size and shape of the pessary; the principles of treatment remaining the same in all." Again, Dr. George Granville Bantock says (Braithwaite's *Retrospect*, July, 1878, p. 188): "It is to *relieve symptoms*, and the relief of symptoms is the measure of efficacy of all treatment. . . . It is nothing to be able to say that a woman who walks into your consulting-room complaining of pain in the sacral region, and an undefined feeling of 'bearing down' in the pelvis, which interferes with her walking, is aggravated by a fæcal evacuation, and prohibits sexual relations, in a few minutes after the application of a pessary walks with comfort, tells you she is now free from pain, and goes home to

find she can discharge all her duties with satisfaction! Can the same be said of any other method of treatment?"

Such men, high in authority, as Drs. Mathews Duncan, Henry Bennet, and Dr. Atlee of Philadelphia, have condemned pessaries in unmeasured terms, but years of treatment by depletion, and local applications of various kinds, will not relieve the diseased uterine condition unless the womb be elevated, by a properly and scientifically adjusted pessary, to its normal plane, thus putting the vessels furnishing its blood-supply in the most favorable position to discharge their function. This position is fully sustained by a paper read by Dr. Braxton Hicks, and one by Dr. Thomas Chambers, before the British Medical Association,* as well as by Dr. Bantock in the above quotation. Dr. Bantock† reports some cases of menorrhagia so well illustrative of the points under consideration that we quote in full. (Let not the fact be lost sight of, however, that we do not consider pessaries curative, but simply palliative—but essentially necessary until the remedies applied have put the womb into such a condition that it will retain its normal position.)

Dr. Bantock's Cases: Retroversion with Menorrhagia. Case I.—Mrs. B. came under my care suffering from severe menorrhagia and dysmenorrhœa, for

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* Braithwaite's *Retrospect*, July, 1878, p. 188.

† Ibid. p. 189.

which she had been under medical treatment for some months. She complained of constant pain more or less severe, which so interfered with her walking that it was with great pain and difficulty she made her way to the out-patient department of the Samaritan Free Hospital. Menstruation was excessive in quantity and duration. I found the uterus very much retroverted, body enlarged, cavity measuring about three and three-fourths inches. The organ was readily replaced by means of the sound, but at once fell back on removing the support. There was tenderness of the body on pressure, great tenderness of the fundus on pressing the sound against it, and a little blood followed the use of the instrument. I at once adjusted a Hodge's pessary with my usual precautions, and the patient went home in great comfort with a prescription for tincture of the muriate of iron and liquid extract ergot, ten minims of each, to be taken three times daily, From this time I attended the patient at her own home. She wore the instrument for about nine months, during which time she was able to attend to her household duties; the periods gradually assumed the normal character, assisted, as I believe, by two sponge-tents, and I removed the instrument. The patient is still quite well. *Case II.*—Mrs. D., aged 33, came under my care at the Samaritan Free Hospital in the summer of 1875, the subject of severe menorrhagia, which told its tale in her an-

æmic appearance, and from which she had suffered since her last (sixth) child, about a year and a half ago. She also complained of a constant bearing down, and stated that the loss of blood was very great, and she was scarcely free from a hemorrhagic discharge. I prescribed iron and ergot. A few days after I was requested to visit her at her own home, and so great was the loss that at first I thought I had to do with a case of abortion. I then found the uterus very much retroverted, and prescribed ten grains of gallic acid every two hours. As soon as possible I admitted her into the hospital, and on the same day I adjusted a Hodge's pessary. This gave immediate relief to the feeling of bearing down. I kept her in bed for about a fortnight, administering iron and ergot three times a day, with the result of procuring her an interval of nearly three weeks and a moderate period. I then dismissed her. She returned on Nov. 9, stating that the menses were regular and not excessive in quantity, the flow lasting eight days "off and on.". . . . On May 2, I was satisfied she was pregnant, and on the 23d I removed the pessary. She was confined Sept. 25. No return of the retroversion or menorrhagia.

The citation of these cases gives emphasis to the advice given above, and wherever there is obstinate hemorrhage from the womb, search for the

local cause, and so soon as discovered, endeavor by appropriate remedies to remove it.

Laceration of the Cervix.—This is an accident the serious nature of which until recent years was entirely overlooked, and no doubt many a woman suffered long and much because the cause of her pain was not detected. To Emmett we are indebted for calling attention to the great importance of this lesion, though Simpson described it thirty years before (Edis). The effect of the laceration is to roll out the flaps, or force them apart, in such a way, from pressure of the enlarged womb resting on the floor of the vagina, that the circulation of the cervix is obstructed, and the mucous follicles undergo pathological change into cystic degeneration, the obstruction to the circulation increasing until the cervix is in a condition of partial strangulation (Prof. Briesky, quoted by Emmett). This being the nature of the trouble, it is easy to comprehend how a condition of menorrhagia or metrorrhagia is established as one of its symptoms, a symptom which is of especial significance in the rôle it plays, in depressing the vital energies of the patient.

Case VII.—I was called by my friend, Dr. John G. Skelton, to visit, in consultation, Mrs. B., æt. —. She had borne one child, which, after a tedious labor, had been delivered with forceps. This was about two years prior to my visit. She gave the history of more or less continuous flow. Her vital energies

were much depressed, appetite bad, and she was confined to bed more or less constantly. It was difficult to determine as to her period, because of the continuous hemorrhage. There was a question of early pregnancy. Examination revealed a small globular tumor in the right iliac region. Digital examination showed the presence of a body, globular in form, to the right, and slightly posterior. The finger readily recognized a laceration, left lateral in location and os uteri patulous. Specular observation confirmed this diagnosis, and revealed a plug of mucus in the cervical canal looking like glue and the surface of the laceration granular. Under the influence of tonics, with a local application of Battey's Solution No. 2 once a week, with vaginal douche of warm water and borax, removed the granulations, and so far effected a cure as to stop the flow and improve her general health, so that she was able to be up and about the house. After a time the tumor rose up towards the median line. At the proper time she quickened, and was duly delivered. She has since passed from under my observation.

Undoubtedly the most common cause of laceration of the cervix is precipitate or instrumental labor, there being rigidity of the os uteri. In many cases produced by instruments the labor no doubt was tedious, but it is lamentable, the tendency at the present day to meddlesome midwifery. Dr. Em-

mett draws a graphic picture of the suffering of the poorer classes from the impatience of the attendant accoucheur, and the too early application of the forceps. A selfish doctor has more regard for the saving of his time than the welfare of his patient.

Dr. Emmett cites, also, criminal malpractice as a fruitful cause of this trouble. Laceration occurring antero-posteriorly is apt to heal spontaneously during the puerperal month. The left side of the cervix is the most common site of the lesion, next is double lateral, then right lateral. Sterility is usually the result of this accident, but strange as it may appear, and unaccountable, too, some women not only have no suffering in consequence of it, but afterwards bear children.

Case VIII.—Mrs. D. was delivered with instruments in October, 1883, after a labor lasting twenty-four hours. The os was thin but very rigid. Great care was exercised in the use of the instruments. She had a good getting-up, complained only of a little pain in the loins, not enough subsequent trouble of any kind to make her seek advice until ten months subsequently. She then sought relief from a condition of prolapsus, amounting almost to procidentia. Vaginal examination revealed a misplaced womb; extensive granular erosion of cervix; laceration on the left side to vaginal junction; attendant leucorrhœa. Period *absent* for more than two months; pregnancy suspected, and subsequently

diagnosis confirmed. She declined any treatment for the laceration, being something of a crank.

A table given by Emmett shows an increase of flow in 50 per cent. of the cases he had under observation. When the laceration has been somewhat recent, the flow will be the more profuse or irregular (Emmett). It is often a constantly recurring flow which makes the patient seek treatment. It is not within the province of this work to go elaborately into the consideration of this lesion, but simply to give it sufficient prominence to call attention to it as a cause of menorrhagia. The best treatment consists in—first, a preparatory treatment where the suffering is such as to indicate an operation; and secondly, to sew up the rent as soon as the patient is in a proper condition for it. The indications for an operation are neuralgia of the womb, excessive hemorrhage, or a condition of subinvolution. The preparatory treatment consists of free vaginal baths of hot water, impregnated with borax, boracic acid, etc., used once or twice daily; introduction at night of glycerine balls, and the application once or twice a week of Churchill's iodine to the erosions. In addition, a properly adjusted pessary will lift the enlarged womb from the floor of the vagina and assist in the cure. There is probably no trouble which we are called on to treat which is more satisfactory in its results.

Ulceration.—This is unquestionably a misnomer in

many cases. Lesions formerly described as ulcers of the cervix uteri are now known to be due to denudation of epithelium, consequent upon inflammatory affections of the cervical mucous membrane. Cases which have been proven subsequently to be bi-lateral lacerations of the cervix, where, as is always the case, there is eversion of the cervical canal, and a consequent raw surface from friction on the vaginal floor, have been treated for ulcerated surfaces. But we may have true ulceration consequent upon inflammatory trouble located in the uterine cavity. I found such a condition post-mortem in a case which had been very obstinately metrorrhagic. Then there may be ulceration due to syphilitic infection and to cancerous disease of the cervix.

The indications in these cases for the control of the metrorrhagia are fulfilled by the remedies appropriate for the relief of the troubles in other localities. In simple ulceration in the cavity, Churchill's Tinct. Iodine, or Monsel's Solution, applied once or twice a week, will be most likely to effect a cure. If the ulceration of the cervix be syphilitic, it should be well cauterized with nitric acid or acid nitrate of mercury, and when the slough comes away, well dusted every day with iodoform. Of the treatment of cancerous disease of the cervix I shall speak subsequently.

Granular Erosion.—This is a very common cause

of hemorrhage, both excessive at the menstrual period and during the interval, sometimes the discharge being only an oozing, and again excessive enough to be metrorrhagic in amount. It is a variety of trouble too often overlooked by the general practitioner, who vainly endeavors by all sorts of tonics and astringents administered by the mouth, to check the bleeding. In the event of a digital examination he may be deceived also, there being little or no indication of the lesion, unless it be of so exaggerated a character as to impart an unusual velvety feel to the finger, which, when removed, may be stained with blood. To illustrate: *Case IX.*—I was called to see A. B., aged about 25, dark hair and eyes, above the medium size. She was very anæmic, and gave the history of long continued and intractable hemorrhage from the womb, strength so impaired as to keep her in bed. Excessive leucorrhœa in the interval of the flow. She had been for some time in the hands of a medical gentleman, who had diligently plied her with all of the usual internal remedies, and had attributed her hemorrhage to an abortion. He had never made any specular examination, his only local investigation being by the touch. I found on careful examination with speculum and probe the entire vaginal portion of the cervix eroded, uterus relaxed and measuring three and a half inches in depth. She was immediately placed upon active

tonic treatment of iron, arsenic and strychnine, and an application of Churchill's Iodine made to the cervix two or three times a week, a daily application (night and morning) of glycerine on cotton, with hot vaginal douche of salt-and-water. The result of this treatment was a speedy restoration to health.

The cervix uteri is covered by a smooth mucous membrane, continuous in one direction with the vaginal mucous membrane and in the other extending through the cervix itself into the uterine cavity; but it undergoes a radical change at the os internum in its histological characteristics or constitution. The cervical membrane contains numerous papillæ, each containing the loop of a very minute blood-vessel, and these are continuous the one with the other.* In the cervical canal, and over the surface of the vaginal portion, are numerous follicles. These are important elements in the production of the symptoms found when a pathological condition is set up by the development of inflammatory action from any cause. This inflammation starting in the cervical canal and extending to the vaginal portion, it first becomes denuded of its epithelium, then follows enlargement of the follicles. The diseased condition for some time is not suspected, but at last it has progressed to the point where some urgent symptom demands investigation, and we find the

* These villous projections are new formations.

surface of the cervix presenting the appearance of a piece of red plush, or granular, as if numerous minute red bodies had been projected upon it. This surface throws off often an ichorous leuchorrhœa, producing pruritus vulvæ. Often a trouble-some hemorrhage will drive the patient to seek relief, and if the specular examination be made during the flow the blood may be seen springing from this granular surface. The causes predisposing to this trouble may be previous ill health, or some diathesis, as the tubercular or syphilitic. These put the organ in favorable condition for the action of such excitant causes as displacements, abuse of sexual intercourse, cervical laceration, a misapplied pessary, etc. Close observation demonstrates that granular erosion is a factor usually of some existing inflammatory affection. At the same time it must be borne in mind, that it may itself be a starting-point for these affections by keeping up a condition of hyperæmia. Enough has been said of this condition to indicate how it may be a fruitful source of hemorrhage. For its cure Dr. Mundè advises that it is of the utmost importance to cure the cause of the erosion first. He applies to the cervix a solution of the nitrate of silver—ʒ i. to the ℥ i. of water—then applying a tampon. In subsequent applications he diminishes the strength of the nitrate of silver solution, and towards the close of the treatment uses an insufflation of iodoform and tannin (Goodwin, p.

85). I am obliged to dissent from Dr. Mundè as to the advisability of using the nitrate of silver. It is an agent of *surface action;* it coagulates the albumen, and often increases the surface congestion. Frequently I have seen blood follow its application. I am constrained to believe from long experience that such an agent as iodine, in the form of the simple tincture or Churchill's Tincture, is a better agent to promote rapid cure, because it penetrates the tissues to the region of healthy capillary action, and tends thus to break up the condition of hyperplasia, which is back of this condition of granular erosion. We are much indebted to Dr. Mundè for advising the use of the sharp curette in the treatment of obstinate cervical catarrhs. I have had the most prompt results from this method; but here again I must take issue with him in the application of fuming nitric acid or nitrate of silver after the use of the curette, because these agents tend so strongly to produce stenosis of the cervical canal. Dr. Mundè's treatment of iodoform and tannin and his suggestion of the use of galvanism in obstinate cases are to be highly commended; but in my own experience in the treatment, not only of granular erosion of the cervix, but in engorgements also, the persevering and systematic application of glycerine on cotton, with the vaginal douche of hot salt-and-water, certainly accomplishes in many cases the best results, putting the uterine tissue in

the most favorable condition to be benefited by the application of iodine or iodoform, etc. There is too strong a tendency in the gynæcologists of to-day to drive their cases, instead of coaxing them back to health.

Malignant Disease of the Uterus—Cancer.—This affection is very common. It occurs usually in women who have borne children, and generally those who have been very fruitful. It is most apt to develop in those cases where some injury has been received in parturition. Emmett believes that all or nearly all cases of epithelioma have laceration of the cervix as their exciting cause ("Principles and Prac. Gynæcology," 3d ed. p. 509). No doubt this lesion acts as an exciting cause where there is some heredity predisposing to cancer.

It is the same affection as that occurring in other parts of the body, the mamma being the favorite seat of the disease, and the uterus the one next in frequency, as the point attacked. Race or condition do not afford any exemption. During my residence at Howard's Grove, a large freedmen's hospital, it was frequently observed in the negro, and I remember two cases from whom the mammary gland was removed the same day for scirrhus, and one of them had the remaining gland removed within six months. In another case the breast was amputated for scirrhus, and six months after the patient died from cancerous disease of the liver, as

proven by post mortem. In my private practice I have removed the breast of a *negro man* for cancer. Dr. Emmett says, that "it has been shown by observers that the negro in this country is much less liable than the white woman to cancer of the uterus." He adds: "This is unquestionably true, and I can add my professional experience in corroboration of it, since I have known but a single negro woman, and she a mulatto, who had cancer of the uterus." He also believes that the better classes are oftener afflicted with this disease than the poorer ("Prin. and Prac. of Gynæcology," 3d ed. p. 508). I am surprised that so eminent an authority as Dr. Emmett should make such a sweeping assertion as regards the negro. It is to be remembered that *he* lives in a city where the negro population is infinitely in the minority as compared with the white; also that, commanding as he does a most remunerative class of practice, both in his own city and abroad, he is not in a position to see much uterine disease in the negro race, nor are their circumstances such as to allow them to take advantage of his great skill. I have hinted above how common in my own experience has been the occurrence of cancer in the negro. If this be so in the mammary gland, why not in the uterus also? It is reasonable to suppose it would be found, because we know this organ is the first point in the order of election after the mammary gland. I have repeatedly

seen cancer of the womb in the negro woman, and I believe the experience of the profession in the South will bear me out in the assertion *that it is not a rare affection.* Another point: I believe *it equally common in the lower and middle walks of life* as in *the best*, and my opinion is based on clinical observation, cases of my own and those seen in consultation. In both the negro and the lower and middle walks of life, the history of these women show that they have borne more than the average number of children, a class who have usually, too, had, preceding the invasion of the disease, unusually good health. Both of these facts coincide with the history of the cases observed by Dr. Emmett.

The prominent symptom of these cases which first attracts attention is hemorrhage. It is not our purpose here, nor is it pertinent to the scope of this work, to consider the histology of cancer, but more especially its frequency as bearing upon hemorrhage, and the relief of this as one of the forms of metrorrhagia and its immediate danger to life.

Now the form in which we oftener see malignant disease of the uterus is epithelioma of the cervix, an affection local in the outset, but which, if left unattended, endangers life both from excessive hemorrhage and from septic poisoning. I would emphasize the importance of investigation, with the end of discovering, possibly, epithelial disease if the hemor-

rhage occur on *the verge of the menopause*. A case in point is the following:

Case X.—Saw Mrs. ——, aged 42, wife of a retail grocer, in the summer of 1881; found her suffering from metrorrhagia and completely exsanguined. She had been in the hands of another physician for a week previous to my visit. He had done nothing for her except to give ergot internally and to tampon the vagina. The removal of the tampon was followed by very free hemorrhage. Close examination revealed that the blood came from the interior of the cervix. Three medium-sized sponge-tents were forced into the cervix without much difficulty and the tampon re-applied. The next day the tents were removed, the cervix found sufficiently dilated. With Sims' sharp curette I scraped out a point in the cervix the size of a nutmeg, which was undoubtedly incipient cancerous disease. Nitric acid (fuming) was then freely applied, and a pledget of cotton saturated with sweet oil applied over it. The hemorrhage ceased so soon as I got into healthy tissue, and did not again return. In a week the woman was able to be out of bed and to go about her usual avocations.

The average age at which this trouble begins is 43 (Emmett). Its curability is a question which is still *sub judice*. The day has certainly arrived when decided operative interference is considered justifiable, even though it involve so serious an

operation as the removal of the uterus and its appendages by laparotomy. But nothing has as yet been accomplished which renders the prognosis other than of the gravest. We hope for the best results when we interfere in the earliest stages of the disease. The vaginal examination should be made with the utmost care, that hemorrhage may not be brought on or aggravated. The discovery of a rough, friable mass indicates epithelioma. The odor is penetrating and peculiar, so that once recognized it is ever after diagnostic.

When the diagnosis is made out there should be no delay in operating. Hemorrhage may be temporarily controlled by vaginal injections, freely impregnated with liq. ferri persulphatis. This also has another effect; it hardens and condenses the tissues of the diseased womb. It is necessary also to keep down the odor by a vaginal wash well impregnated with some good disinfectant. I know no better than the bromo-chlor. alum, as it also possesses decided astringent properties. Churchill's Iodine applied to the bleeding surface will often check the hemorrhage, but I like Battey's Solution No. 2 (iodine, ℥ ij.; acid, carbolic, ℥ ss.) better than any application which I have tried to control the bleeding. In past years the acid nitrate of mercury was much lauded as a local application, but it has some time since been abandoned. Let us glance for a moment at the constitutional treatment before looking mi-

nutely into the operative procedure. Prof. McGuire of this city claims to have had benefit in cancerous disease from the internal use, long continued, of the hypophosphites of lime and soda. Certainly, we have a right to expect as much good from iron and arsenic as from any other internal remedies.

Dr. Goodell says ("Lessons in Gynæcology," p. 188): "The common-sense indications are to eradicate the disease or to check the excessive serous and bloody discharge; to correct the fetor; to allay pain and to prolong life." This is to be accomplished by the removal of the cervix by the hot wire of the battery or by the "écraseur."

Bromine as a caustic has been recommended by Drs. Routh and Wynn Williams (quoted by Sims, *Amer. Jour. of Obstetrics*, vol. xii. p. 452). In the article just referred to Dr. Sims advises the following method of removing the cancerous cervix, and any disease which may have extended to the cavity of the uterus: "To exsect the whole of the diseased tissue, following it up to the body of the uterus if necessary, and when all has been done that can be done by knife and scissors, then caustic strong enough to produce a slough is applied, . . . and allowed to remain there till the slough is ready to come away." But he goes on to say, eternal vigilance is necessary, and on the appearance of the slightest induration or nodule threatening a return of the disease the operation is to be repeated. The

uterus is drawn down, and if the mass is friable it is scraped off with the sharp curette; if firmer, it may be cut away with the scissors. Afterwards the surface is to be carefully examined, and every trace of diseased tissue scraped off with the sharp curette, until the uterus presents to the finger the smooth, elastic feel of healthy tissue. The cavity is now filled with cotton wool, saturated in some styptic—the liq. ferri persulphatis (1 pt. to 2 pts. of water), or a solution of alum (1 to 12), or a solution of carbolic acid (1 to 40). It may be necessary to remove a part of the tampon in a few hours, and more may be removed the next day; but that portion which fills the upper part of the cavity is not to be removed until the fourth or fifth day. When this is removed cotton-wool, saturated with a solution of the chloride of zinc ʒ v. to ℥ i. of distilled water, is substituted. This produces intense pain, which must be controlled by morphia. (The reader is referred to the leading article in vol. xii. of the *Amer. Jour. of Obstetrics* for valuable information on this subject by Dr. Sims.)

In the number of the above journal for March, 1884, will be found a most admirable article by Dr. Ely Van de Warker on the same subject. Dr. Van de Warker modified Dr. Sims' procedure by making two operations. He first amputates the cervix at the vaginal junction, then uses the curette, or his finger-nail, till all possible diseased tissue has been

scraped away. He then applies in small pledgets, wrung out of a solution of subsulphate of iron, one part to three of water. Of course he advises, as does Dr. Sims, that on the slightest evidence of blood-poisoning the cotton should be removed (and the cavity washed out with a weak solution of carbolic acid). In two or three days this cotton may be removed and then the zinc dressing is applied, which constitutes his second operation. There is now no danger of blood-poisoning. Two strengths of zinc solution are used; the milder (equal parts of chloride and water) is for the portions of the uterus most thinned by the scraping, the stronger (℥ v. to ℥ i. water) for the other portion of the cavity. The slough will separate in from five to six days; no force should be used to detach it.

Much good is to be expected from decided treatment like that just described *if instituted early enough*. In the one case which I saw, after much damage had been done, and in which the hemorrhage was excessive, life was prolonged, and suffering for some months relieved by freely searing the entire cavity with Paquelin's thermo-cautery. The slough came away promptly and the surface healed kindly; but the disease ultimately returned, and death finally put an end to the sufferings of the poor victim. In conclusion, I would say that the above methods promise more than any other yet devised, though in the future much may be hoped

for in a perfection of the operation for the removal of the uterus; but even this will have to be done in the incipiency of the disease to effect a radical cure.

Sarcoma.—This growth occurs during the period of sexual activity by preference. It springs from the fundus of the uterus internally, and is more or less sessile in its attachment. Its growth tends to partial dilatation of the cervix, so that is forced partially into the vagina. It is an affection only less malignant than carcinoma uteri, its recurrence after excision being due to its tendency to infiltrate the surrounding tissues. The surface is soft, spongy, friable. There are two varieties. It is of cell growth: one variety having a stroma of spindle cells, the other of round cells more rapid in growth and more distinctly malignant than the other. These growths are very vascular, and tend strongly to excessive and uncontrollable hemorrhage. The prognosis is unfavorable, the ultimate end being fatal. The symptoms are similar to those occurring in cancer—pain, hemorrhage, offensive discharge, cachexia, etc. The pain is a more prominent symptom than in cancer. The treatment consists in the early removal by the spoon-saw, or écraseur, of as much of the growth as possible, with application of nitric acid to the raw surface after removal; but the only hope of permanent cure is in the *entire* extirpation of the uterus. Where life is in immediate danger from hemorrhage a tampon of cotton, sat-

urated with liquor of persulphate of iron, promises the best chance of controlling the bleeding, the tampon being allowed to remain for two or three days, or until it separates and can be removed without causing fresh hemorrhage by rupture of the friable tissue.

Polypi.—These may be cellular, glandular, or fibrous, and are attached by a longer or shorter stem to the uterus (usually the cervical portion), on its interior surface. They are formed from one of the tissues existing in the uterus, and any one of them may undergo some degenerative change, as fatty, calcareous, etc. These growths are to be detected by a careful examination of the uterus, by digital examination, the probe, bi-manual method, and speculum. The indications of cure are the prompt removal of the growth by the écraseur. This operation is to be preceded by the free administration of ergot beforehand, so that the polypus may be forced out of the uterus into the vagina, in which location it is easy of removal. If the polypus has not been forced into the vagina, free administration of ergot will accomplish the same result.

Fungus Growths and Retained Products of Conception.—Under certain conditions fungosities spring up from the endometrium, usually they come from the placental seat. They are a fruitful source of hemorrhage. They are most liable to occur a few months after labor. There may be some of the prod-

ucts of pregnancy retained, and these two conditions may be present conjointly or separately. The way to attain a permanent cure is by the free use of the curette, scraping thoroughly the endometrium and then applying liberally the tinct. of iodine, or the co. tinct., so as to modify, if possible, the uterine mucous membrane, and, if possible, prevent any recurrence of this annoying affection. When these fungosities are scraped away they have a clear, pearly appearance, and are about the size of beads. The application of the iodine before the curetting will not avail except temporarily.

Extra Uterine Pregnancy.—It must not be forgotten that when this conception occurs there is a development of the uterine cavity; that the os and cervix are very patulous, and the tendency to development of the vascular supply of the uterus may thus cause metrorrhagia, simply because the cavity of the uterus is of large size and empty. Hemorrhage under these circumstances leads us to suspect the existence of uterine myoma. The history of the case, however, and the fact that the uterus is usually displaced by the tumor of the sac containing the fœtus to one side, and vaginal touch detects an enlargement outside of the womb on one or the other side, and a little posteriorly, and invariably intimately associated with the tumor. Rectal touch also should be resorted to as a means of investigation; it may be that the child's form may be dis-

tinguished in this very way. Finally, if the sounds of the fœtal heart can be detected, the diagnosis will be fully made out.

Ovarian Congestion.—Richardiere of Paris (*Ann. de Gyn.*, Oct., 1882. Abst. 15, *Amer. Jour. of Obstetrics*, sup. for Dec., 1882) cites a case so rare and so interesting that I quote it in full: "The patient was a domestic 20 years old, in the service of M. Empis, at Hôtel Dieu. She began to menstruate at seventeen years of age, and metrorrhagia accompanied the establishment of the function. The flow continued without cessation for seventeen days, and was followed by pronounced anæmia. Her previous life had been regular, her constitution was robust, and there was no evidence of any particular diathesis. The menstrual periods succeeding the first have always been irregular. Sometimes two or three months elapsed without a *show*. Metrorrhagia has recurred upon three occasions, coincident with menstruation, the phenomena being similar to those which appeared when menstruation first began. It was during the last attack that she entered the hospital. At that time she had already been flowing for twelve days, and had done nothing to relieve or stop it. The blood discharged was of a pale red color, and was occasionally expelled in small clots, after severe bearing-down pains. The flow was constant, night and day. The patient was extremely anæmic, with yellowish skin and blanched

mucous membranes. She complained of vertigo, nausea, and palpitations. A murmur could be heard at the base of the heart, which was propagated into the vessels. For treatment, rest in bed, ice to the abdomen, and injection were prescribed. The following day the flow was less abundant; the symptoms of anæmia were more pronounced; the patient was continually somnolent, and refused all alimentation. Vaginal examination revealed nothing abnormal about the uterus; there was no metritis and no fibroid tumor. Pressure in the region of the ovaries was somewhat painful. The bad symptoms continued, and she died upon the evening of the fourth day after her admission, death being preceded by great agitation, a very frequent pulse, and great dyspnœa. The autopsy showed that the organs were healthy, but quite exsanguinated. The uterus contained a clot which extended into the tubes as far as the fimbriated extremities. The clot was not adherent to the surface of the mucous membrane, nor did the mucous membrane present evidences of congestion. The ovaries were very large, particularly the right one, which contained two hemorrhagic foci, comparable to those which are seen after cerebral hemorrhage. They were about the size of a walnut and were probably located within the Graafian follicles. Three or four other foci of a yellowish color were found in the same ovary. The left ovary was large, and showed three

or four hemorrhagic foci, not very recent as to their origin."

General Medication.—We cannot rely on agents given *per orem* to control or stop uterine hemorrhage. These are only adjuncts to local treatment. Opium may be given to allay pain and quiet the circulation. Gallic acid, prussiate of iron, ergot, are all given internally, and claims for great benefit made for all of them. The patient should be kept absolutely quiet in the recumbent position. Bromide of potassium, bromide of ammonium, tinct. cannabis indica, are also credited with beneficial results. Of course active tonics are to be given, and every means taken advantage of which will build up the general health. In a nursing woman, obstinate menorrhagia or metrorrhagia demands the immediate weaning of the child. A deranged condition of the liver should be corrected by small doses (one-fourth to one-half a grain) of calomel, repeated every hour until decidedly bilious stools are obtained. According to Mr. Henry Chute (*Medical Record*, June 7, 1884, p. 640), menorrhagia is a very frequent ailment of women at Cape Colony. He recommends the American witch hazel (Hamamelis Virginica) in doses of half a teaspoonful of the fluid extract in sugared water three times a day. It need not be given to anticipate the flow. It is said to have a pleasantly exhilarating effect, and where there is dysmenorrhœal pain to relieve

it in the most marked way. M. Paul (Braithwaite, Jan., 1879, p. 283) says "the hypodermatic injection of ergotine is the most rapid and efficacious means we have at our disposal in the treatment of menorrhagia." Dr. Geo. S. Ranking (Braithwaite, June, 1880, p. 260) recommends gtt. x. of Fowler's Solution for the cure of menorrhagia. M. Denos advises infusion of digitalis as a valuable remedy—gr. viiss. to gr. iv. in ℥ v. of water (*Amer. Jour.*, April, 1878, p. 576). Dr. J. Milner Fothergill (Braithwaite, Jan., 1877, p. 251) recommends bromohydric acid as a most valuable remedy for the relief of menorrhagia associated with sexual excitement. In concluding this chapter, I would urge the great importance of thorough and earnest search for the cause of the hemorrhage, for the sake of the patient and our own reputation.

CHAPTER V.

DYSMENORRHŒA.

WOMAN has to endure few maladies which directly or indirectly cause her more suffering than does that which we are about to consider. The physiological law of her being is such that each month she must pass through the process of ovulation, and the ripening and discharge of the ovum is, as we have already seen, accompanied by a discharge of blood from the uterus. In a state of perfect general health and of the generative organs she has some discomfort. There is more or less perturbation of her nervous system, more or less sense of lassitude, perhaps vesical irritability to some extent, in fine, her whole economy is for the time on edge, as if some function of moment was being performed.

Now, difficulty in the discharge of the contents of the uterus, or the overcoming of a present difficulty in the matter of a sufficiency of flow, or a rheumatic or neuralgic condition of the uterus or ovaries, or it may be some mechanical obstruction to the free exit of the menstrual flow, any one of these conditions, of course, increases these discom-

forts until the difficulty is magnified into suffering, actual and most excruciating, in many cases. To a variety of causes may we look for an explanation of this suffering, and the perfect application of remedies for relief and cure depends upon a thorough understanding of the exact cause. I would therefore urge in all of these cases careful, diligent, painstaking investigation.

Now we see two varieties of cases of dysmenorrhœa, which form the two grand divisions of sufferers: the one, those who have some congenital defect in the womb, or from improper care and direction during the period of development in too early womanhood, have acquired trouble by neglect or inattention to the laws of health at the time of the molimen. It is in this variety of cases that so much suffering might be saved, and so much good accomplished, if only the mothers of these daughters would take the pains to inform themselves as to the best management of their daughters at the age of puberty, and would enforce obedience to rules of prudence and forethought. Not only does trouble arise because the girl is allowed to take cold during the period by exposing herself improperly clad in inclement weather, but equally as much harm results from exhaustion of the nerve-force by undue exertion during, or just preceding the period, in the shape of dissipation and late hours, at germans and parties, and in another direction, too, when the

parents are to blame. The girl is ambitious, and during the time when nature is developing the sexual organism, and fitting her for the proper fulfilment of the duties of wife and mother in future years, she is allowed, by too close attention to her books, to call off from the uterus and appendages the nervous energy to be expended on the acquirement of learning that was designed by nature to take an important part in this physical development. There is no necessity for this. God designed that there should be a time for everything under the sun, and a care exercised over the general health until the function is healthfully and properly performed will repay amply, in the greater ability to acquire a cultivation of the mind, a healthy mind in a healthy body, of which the frame enfeebled by disease is not capable.

On the other hand, we see many cases of dysmenorrhœa where the cause is acquired, sometimes, as the result of difficult labor, or some accident or imprudence, by which disease of the uterus is set up, or displacement produced in the shape of version or flexion.

While, however, single women may be the subjects of an acquired dysmenorrhœa, it is rare to find it the case. A significant fact in this connection is that the cases of dysmenorrhœa we see in single women are usually the simplest and most amenable to treatment. Many cases are cured by treat-

ment, and a vast number more would be if the complications of the puerperium could be avoided. It will be convenient to discuss this "*symptom*" under one of the following heads, descriptive of its pathology, so far as may be: "*congestive*," "*neuralgic*," *membranous*, *obstructive*, *ovarian*.

Congestive Dysmenorrhœa.—The simplest form of this variety of dysmenorrhœa is that in which the congestion is due to constitutional causes; such, for example, as a torpid portal circulation, the taking of cold just preceding or during a period, overexertion, which has caused too great a determination of blood to the pelvic organs. This condition may be speedily relieved by appropriate remedies, such as a brisk purgative, an active diaphoretic, perfect rest in the recumbent position for a few days, local hot applications over the hypogastric region. But often some one of these conditions will be the starting-point for the development of an endometritic or cervical catarrh, which keeps up the suffering for months, or even years. The flow not being adequate to relieve entirely the congestion, the engorged condition of the uterine mucous membrane becomes greater at each succeeding period, until a condition of chronic inflammation of the mucous lining of the uterus is fully established. Nor is this all; for if this condition be too long neglected the inflammation may, indeed will, extend to the parenchyma of the uterus, and metritis in its most

obstinate form is set up. With this condition we have all the attendant discomfort from leucorrhœa, pain, languor, anæmia, in fine, general ill health. The pain suffered, always intermittent in character in this variety of dysmenorrhœa, may be due to the scanty flow. The uterus is in a condition of irritation, and more or less spasm is excited. On the other hand, the flow may be so excessive that the uterus may be incompetent to throw off the discharge as fast as it flows into the cavity. Clots are formed, and the muscular contraction of the walls of the uterus to expel these produces the suffering. The amount of pain varies in proportion to the gravity of the local condition of the uterus. It is an established fact that at each month the uterus sheds its epithelial lining; there may be only a few pains preceding, or at the beginning of the flow, or they may be severe and last through the whole period, many clots being extruded, and the lining of the uterus being thrown off as a decidua, forming what is known and described as membranous dysmenorrhœa. Dr. Emmett ("Principles and Prac. Gynæcology," p. 183) says: "It has been supposed that the formation of this false membrane, as it has been termed, is due to ovarian influence; but of this we have no proof beyond the frequent existence of pain over the region of one or both of these bodies. The throwing off of this coat from the uterine canal is a frequent accompaniment

of an enlarged and prolapsed ovary, but it does not always take place with this condition; sometimes we are unable to detect the slightest disease in the ovaries."

General plethora may be a cause of the trouble, there being so much blood in the mucous lining of the womb that a condition of acute congestion is set up and the blood either does not flow freely enough to deplete the engorged capillaries, or flows too fast to make its exit from the uterus, becomes coagulated, and the organ resents its presence as a foreign body, and contracts continuously upon it until relieved of its presence. The *symptoms*, if the attack be due to simple hyperæmia, are constitutional disturbance, fever, with hot, dry skin, suffused eyes, headache, thirst, pelvic pain, with diminution of the flow. Where local inflammation exists there is severe fixed pain in the pelvis. The prognosis depends upon the causes which have given rise to it. The treatment has been indicated above.

Neuralgic Dysmenorrhœa.—This variety of disorder may exist without any organic disease of the womb being present. Plethoric persons, or those of a gouty or rheumatic or neuralgic diathesis, are the subjects of it. Agents similar to those which, deranging the nerves in other parts of the body, produce facial neuralgia, or on the gastric nerves at the time of ingestion of food, gastralgia or gastro-

dynia, etc., may be at work here determining a neuralgia to the uterus at the time of the period. The patient may be seized suddenly, and the pain be of so violent a character as to make her delirious. She tosses wildly about the bed and gives every evidence of the most intense suffering. The pain may abate as suddenly as it came and the remainder of the period be passed in comfort. The pain is not expulsive in character, the flow regular; there are no clots, and no obstruction is to be found by physical examination.

A radical change in the mode of life of these patients is essential. Search for the cause, and when found strive to remove it. The administration of nitrite of amyl, a drop on the handkerchief, and repeated in ten minutes, may probably afford the most prompt relief in the suffering of the paroxysm. Any of the anti-neuralgic remedies may be used with advantage. I would especially commend the muriate of ammonia in large doses (gr. xxx.–xl.), repeated every two hours until the pain is relieved. Sulphuric ether in my hands in doses of half a drachm, repeated every hour until the pain is relieved, given in some vehicle to sheathe it, has been of great value in those cases where there was also some spasm present.

Membranous Dysmenorrhœa.—The researches of Drs. George and Frances Haggan,* of England,

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* *Med. Record*, vol. xviii. p. 577.

have thrown much light upon the pathology of this variety of dysmenorrhœa. Their investigation demonstrated that in all of those mammalian animals which they examined there exists under the epithelium an embryonic tissue, out of which is developed, by its activity, the mucous membrane at the beginning of pregnancy. This holds good to a less extent in furnishing the superficial layers of membrane which are extruded during menstruation. In endometritis this embryonic tissue is in excess. A continuous succession of stages might easily be traced till this membrane becomes so thickened as to be thrown off as a foreign body at the termination of the paroxysm. The Drs. Haggan believed that the same nervous influence was at work here as in the formation of the normal decidua, and this is an highly exalted endometritis, depending indirectly upon some special form of ovarian irritation, there being an abnormal stimulus calling the characteristic function of the ovarian nerves into play.

There is much that is rational in the foregoing views, and if this be the true pathology of this affection much light ought to be thrown on its management. It is a subject which has long been involved in more or less mystery. The views of Beigel are not far from coinciding with those of the Drs. Haggan, as he regards it as an exfoliative endometritis. He believes the affection is not specific, but that it comes on after primitive or second-

ary endometritis. Also that under these conditions the membrane may be thrown off without the existence of dysmenorrhœa. The formation of the membrane is the pathological condition, its being thrown off from the uterus simply an accident of menstruation (*Amer. Jour. Med. Sciences*, Jan., 1877, p. 271). These views were published anterior to those of the Drs. Haggan. Bernutz (*Arch. de Tocol.*, Jan. and Feb., 1879) mentions having had a case under observation during fifteen periods, in every one of which membrane was thrown off, and in only one of them was there any expulsive pains. This he attributed to a physical examination and the use of the sound twelve days before.

We have thus seen that this membrane may be formed and passed without pain; but if there be any condition of irritation, as the passage of a sound, coitus, etc., the blood-supply is increased. The process of separation going on communicates to the muscular fibres of the uterus an irritation which causes irregular contraction; at the same time there is deficiency of dilatation in the cervix uteri, and thus the effort at extrusion is attended with pain.

We see the affection in those women whose health is debilitated, those of scrofulous diathesis, etc., so that an effectual cure is to be reached in a great measure by remedies addressed to the improvement of the general health.

This membrane may be thrown off in shreds, or

it may come away in a perfect cast of the uterus. It varies, too, in thickness in its various parts. The external surface, or that part which is in contact with the uterus, is rough, bloody, sometimes villous, usually so, from fibrinous deposit. The internal surface, or that looking to the cavity of the uterus, is smooth, perforated with numerous small holes like a sieve where the glands of the uterus have their openings. It is irregularly subdivided, too, by furrows. Under the microscope it is found to be the lining membrane of the uterus hypertrophied, almost as it is in pregnancy. So close is this resemblance that the most skilful microscopist can scarcely distinguish between them, if it be at all possible.

Now, as to its causation. Difficulty meets us here at the very outset, because the pathology of the affection is yet in doubt. Appreciating this difficulty I can best meet it by quoting at length what Thomas says are the views held by the leading pathologists ("Dis. of Women," 5th ed. p. 621).

"1. It was formerly believed that a layer of plastic lymph was, as a result of endometritis, thrown out over the uterine wall, which, becoming organized, constituted the cast of the uterus. This belief was entertained by Montgomery, Dewees, Siebold, Frank, Naegelé, Dessormeaux, and others.

"2. It is now regarded as an exfoliation of the entire mucous membrane of the uterine body, due

to congestion and irritation transmitted to the uterus. This view, conceived by Oldham, is adhered to by Semelaigne and others.

"3. The pathological explanation just mentioned being adopted, the cause of the occurrence of the exfoliation is attributed, in the words of Scanzoni, 'to a considerable hyperæmia of the walls of the uterus, which is followed by an excess in the development of the mucous membrane.' This theory is adopted by Courty, Hegar, Eigenbrodt, and others. The last two authorities have proposed for it the name of 'dysmenorrhœa apoplectica.'

"4. Prof. Simpson attributed the exfoliation 'to an exaggeration of a normal condition, or to an exalted degree of a physiological action.' Mandl declares that Rokitansky, Robin, Mayer, and others adopt this view. He further attributes the same belief to Courty, Klab, and Braun, but in this I think he is in error.

"5. It is regarded as being due to an inflammatory condition by Klab, who declares, that 'those pathologists were not far from the truth who described such cases as endometritis.' This view is endorsed by Tilt, Braun, and others.

"6. By some the membrane is regarded as due to a deciduous membrane excited by conception which has just been established, or is ovular in its character. The first of these views is maintained by Hausman, and admitted in some cases by Roki-

tansky; and the second was advanced by Raciborski."

Dr. Thomas goes on to say, he cannot attribute it to endometritis, for in four out of five cases that he has seen, evidence of the existence of that disease was lacking. He also believes it a rare affection, as in his large experience he has only met with it five times.*

Care must be taken not to confound this condition with early abortions, diphtheritic endometritis, exfoliations of the vaginal mucous membrane, blood casts, or fibrinous moulds of the uterus. To distinguish the true membranous dysmenorrhœal membranes, recourse must be had to the microscope, and it must be noted that there is a constant tendency to the recurrence of this membrane at each period. Mr. Lawson Tait remarks that he has never seen this membrane discharged by a virgin, though he has repeatedly examined the shreds thrown off by them. His experience points to its occurrence always in the sterile, or married.† Now the characteristic features of this affection are that the intermenstrual period is liable to be prolonged to even five, six, or seven weeks, and the flow is not necessarily attended by pain; but this is produced by the same causes and in the same way as the pain in the

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* Mr. Lawson Tait says the supposed rarity is a mistake ("Dis. of Women," 2d ed. p. 68).

† "Dis. of Women," 2d ed. p. 68.

other forms of dysmenorrhœa. The flow is usually scanty, though menorrhagia may be present. For a short time before the flow is established, there is pain in the back, hips, groins, and hypogastric region, the increase in severity simulating the labor-pains of abortion until the membrane is passed.

Now what are we to do for the relief of this class of sufferers? The continuous current of electricity is recommended (Edis). But we must, to manage it rationally, seek for the cause. If it be due to endometritis, that must be treated by the application of tinct. iodine (Churchill's), or Battey's Solution No. 2 (carbolic acid, 95 per. ct., ℥ ij., iodine, ℥ ss.), or *ol. turpentinæ*, or some alterative remedy, to the cavity. If the cause of trouble lie in some affection of the ovaries the remedies must be directed to these. The bowels should be kept regular, to prevent, as far as possible, from the pressure of constipation, congestion of the venous plexuses in the pelvis. The general health should be improved by tonics, especially arsenic and the bichloride of mercury in combination with iron. I think the tinct. of the chloride is the best preparation. Now resort may be had to the various bromides, narcotics, etc., for relief of the pain at the period, but these are to be avoided, if possible, because the risk is run of establishing a dependence upon them, and each recurring period the patient resorts to them for relief. Vaginal injections, soothing and emol-

lient in character, are comforting to the patient, and a suppository of ext. belladonnæ and camphor may give great comfort. The only hope of permanent cure is in pregnancy, when the uterus and its appendages are at rest for nine months; the only difficulty here being, that these patients are usually sterile, and the difficulty is to bring about the conception and preserve it to maturity. Just here I would call attention to the importance, in making applications to the uterine cavity, that the time selected should be just succeeding a period to a week prior to the next; and I am inclined to think that it is most probable that under this management pregnancy is most likely to occur. Hewitt lays great stress upon the patency of the cervical canal. Of this I will speak more at length in treating of obstructive dysmenorrhœa. Hewitt * says also that he cured two cases by dilating the stenosed cervix, freely using Sims' sharp curette, and then injected the cavity of the uterus with Churchill's Iodine. Prof. Barker, of New York, cured two cases by iodoform applied to the cavity. Rest at the period is of the utmost importance. Dr. Robert Ormsby, of New York (*Med. Record*, vol. xx. No. 22, p. 597), reports five cases cured by mercury. His attention was called to its value by the accidental ptyalism of a patient suffering with membranous dysmenorrhœa, in whom he had produced acute

* "Dis. of Women," vol. ii. p. 102.

metritis by dilatation during the intermenstrual period. She was given a pill of opium and calomel, to be repeated every four hours. By a mistake of the woman's husband, she took twice as much medicine as the doctor intended, and on paying his visit the next day he found her severely salivated. He was surprised to find that *her menstrual flow had been started in the interval without pain*, and no traces of deciduous membrane *could be found*. Following this hint he pursued the same treatment in four other cases with the most satisfactory result. His plan was to produce slight salivation just before the period, and he states that since adopting this practice he had never seen it fail. Calomel was the only form of mercury that he had used, and he believes it should be pushed to the verge of safety.

We now come to the consideration of the most common form of dysmenorrhœa, namely, that due to obstruction, mechanical or otherwise, and which is to be relieved by local or operative treatment.

Obstructive Dysmenorrhœa.—The simplest form of obstruction is found in those cases in which the patient, just prior to the establishment of the flow, suffers from acute spasm of the uterine muscular tissue. So soon as the flow comes on freely the pain is relieved. This is falsely called obstructive, because in most of these cases it has been found that a full-sized bougie may be passed into the uterus. The sensitive point seems to be at the internal os usually. Edis

says, this affection is of the nature of a neurosis ; but while this may be in the main true, I am sure there must be some pathological condition back of it which acts as a source of irritation on the radicles of the uterine nerves which supply this point. If a pure neurosis, remedies internally administered should effect a cure ; but the fact is that it requires local treatment, and none is so efficient as dilatation. Now we are familiar with the pain where fissure of the anus exists, why may not a condition of fissure about the internal os, or a small and circumscribed abrasion located at this point, be the cause of this spasmodic condition. If this is the true cause, we can easily understand how the condition is relieved by dilatation with bougies or tents. The modus is the same which effects a cure in anal fissure.

The cure of this cause of dysmenorrhœa has been indicated in what has just been said, namely, that the uterus should be carefully examined, and the cervix well dilated by bougies. I prefer the use of tents, as being less liable to do damage to the uterine tissue, and being more thorough. The internal administration at the time of the period of the fld. ext. of viburnum prunifolium, a teaspoonful every two, three, or four hours, will act as a sedative and tend to control the uterine spasm. Caution, however, must be exercised, as in some cases the patient suffers with a sense of fulness and tightness about the head which is very distressing. The pain may be

due to mechanical opposition of some kind. When this is the case there is an accumulation of blood in the cavity of the uterus. It becomes distended, bends over as a retort; the blood acting upon the womb as a foreign body, it resents its presence, becoming more tense. It to some extent straightens out, and contracting expels the blood in the shape of clots, thus giving temporary relief. This may be, and generally is, functional at the outset, but where the obstruction continues, inflammation of the mucous lining of the cavity is set up, because the engorgement present at one period does not subside and disappear before the next period comes on. In this way, too, may anteflexion, or retroflexion be acquired. On the other hand, where a flexion has previously existed from congenital condition of the uterus, when puberty comes, and the menses are established, the retention of the blood is an easier result of the obstruction than in the first mentioned condition, and the ultimate effect is even more certain, and more difficult to remedy.

The causes of this form of dysmenorrhœa are numerous. There may be certain congenital defects, such as a conical cervix, with pinhole os, or there may be constriction at the internal os, or contraction of the cervical canal, acute flexion of the cervix on the body of the uterus, atresia vaginæ, imperforate hymen, or lymph may have been effused into the tissue of the cervix and have become organized. Closure

of the cervical canal, partial or complete, may have been caused by the abuse of some of the more powerful caustics. Emmett ("Principles and Practice of Gynæcology," 3d ed. p. 171) refers to several examples of this kind which had come under his observation caused by nitrate of silver.

The internal os may be patulous enough to admit a sound readily during the inter-menstrual period, and yet there may be obstruction when the period comes on, from the tumefaction of the mucous membrane, physiological congestion being present as one of the factors in the performance of the function. An obstruction of this kind may be the result of cold, or excessive exertion on the eve of a period, and may be the starting-point for much more serious trouble of organic character. There may be a small fibro-myoma growing in the cervix, thus encroaching on the integrity of the canal. There may be a small polypus in utero, acting as a ball-valve to the internal os. There may be an obturator hymen, interfering with the flow of blood from the vagina and damming it back upon the uterus. There may be some cause, as pelvic cellulitis, by which the uterus is misplaced and bound down or distorted, acting in this way as a mechanical cause.

The symptoms of this obstruction at the time of the period are those of uterine colic. When the flow has lasted for a few hours, and a sufficient amount of blood has accumulated to distend the uterus, there

comes on severe, spasmodic pain over the whole pelvis, expulsive in character, and only relieved when the clots have been passed. The suffering gives just ground for local examination, and the speculum and probe clear up fully the diagnosis, assisted by conjoined manipulation. The character of the symptoms make it easy to distinguish the obstruction from other forms of dysmenorrhœa, and the local examination should be made, irrespective of the fact that the patient is single or married, for local treatment must constitute a very prominent element in the proper treatment necessary to effect a cure. Nausea and vomiting are prominent symptoms in some cases of obstructive dysmenorrhœa. These symptoms are due most probably to stretching or pinching of the radicle nerve filaments on the concavo-convexity present in flexions (Hewitt). Various nervous symptoms are always observed, but of these I shall speak fully in a future chapter.

Treatment.—It will serve our purpose best in speaking of the treatment of obstructive dysmenorrhœa to use a few illustrative cases, to indicate the better the points essential in the successful management of these cases.

Case XI.—Mrs. W. Single, æt. 37, separated from her husband for ten years; obliged to work for her support; general health good. She has never borne children, never had an abortion. She has suffered for several years with intense pain at time of period,

which always returned too soon ; usually lasted three days, and is moderate in amount. Gives history of brutal treatment by her husband. Vaginal examination revealed, by touch, uterus retroverted. Cervical catarrh was found present on specular examination. She was ordered to use, morning and night, a vaginal douche of hot salt-water, and as there was every evidence of obstruction from the amount of congestion present, and exaggerated and aggravated at the menstrual epoch, glycerine balls were also applied night and morning. A few days before the period a sponge-tent was introduced and the cervical canal well dilated. The next period was more comfortable. She now left the city for a few weeks' recreation. On her return a suitable pessary (Hodge's closed lever) was introduced, and she subsequently had no trouble.

Case XII.--Miss N. W., aged 26, unmarried, contracted a severe cold in Colorado, resulting in pneumonia. Subsequently, she said she was all wrong in her periods ; was unable to walk, had pain in back, discomfort and sensation of weight in hypogastrium ; pain at the time of period, indicating a condition of spasm of the internal os. She was put upon tonic treatment, kept quiet, and at the time of period, beginning two days before, fld. ex. viburnum was administered, ʒ i., three times a day. This treatment, steadily kept up for two or three months, effected entire relief.

These two cases are examples of the simplest form of obstructive dysmenorrhœa: the first due to malposition, with resulting congestion, relieved by restoration of the organ to its proper position, and gentle remedies for the relief of the congestion, the latter case requiring only a sedative to relieve the spasm at the time of the period, and the building up of the general health. If the obstruction be due to the presence of a polypus the indication is plain: excision of the growth. This may be readily effected by the écraseur. If the trouble be the growth of a fibro-myoma about the neck, it can be palliated only by dilatation. If suitably located in the cervical walls, however, a cure may be effected by its enucleation. If the difficulty be due to a retroflected womb, a cure may be attained by straightening the canal of the cervix by means of an intra-uterine stem-pessary, after dilatation by means of tents or bougies, the pessary being so adjusted as to retain the organ in its normal position as nearly as possible. I am by no means in favor of intra-uterine stem-pessaries, however, nor do I believe that dilatation by any means at our command will be permanently effectual. The means best calculated to make a cure of these cases is to make a bilateral section of the uterine neck, and keep the uterus in its normal position by a nicely adjusted Hodge pessary. I know that it is claimed that these incisions tend to contract, but when made, the mucous membrane

may be nicely brought together over the raw surfaces, and you artificially get the same result as when double laceration occurs as the result of labor, namely, an eversion of the cervical lips, and there is a tendency in the canal of the cervix consequently to remain patulous. Now when the reverse flexion is the cause of obstruction, namely, when the uterus is anteflected, the permanent cure is more attainable. Here we have many resources at our command, with the outlook much more promising from operative procedure.

The method adopted must depend upon several conditions. If it be a simple anteflexion involving the neck of the womb, the operation of slitting posteriorly may be done with perfect confidence of effecting a cure. I am bold to make this assertion because it has been uniformly my experience, embarrassed by few complications, and these could be overcome. Perhaps I have been simply fortunate, but I am more inclined to attribute my success to the *great care* I always make it a point to exercise in the after-treatment. I do not claim anything original in my method of operating; it is the same plan pursued by Sims, Thomas, Emmett, and others. I do always place in the incision a pledget of absorbent cotton saturated with a solution of liq. ferri subsulphatis, one part to four of water. I do this because it is a precaution against hemorrhage, and the action of the styptic on the cut edges

prevents adhesion subsequently. In all these cases I have found more or less corporeal endometritis present, and I apply to the cavity of the womb every alternate day Churchill's Tinct., or some other preparation of iodine. This treatment ensures relief of the diseased mucous membrane of the cavity of the womb, thus putting it in a condition to physiologically perform the function of menstruation, and the opening of the cervical canal removes the mechanical obstruction to the exit of the menstrual blood. The following cases illustrate this treatment, and the results are certainly as satisfactory as could be desired.

Case XIII.—Miss F. H. F., of Louisville, Ky., consulted me April 21, 1876, giving the following history: She was a feeble child, very nervous; began to menstruate at fourteen, but the function was never normally performed as to quantity of discharge or time of return of the period, in quantity being so scanty as to amount almost to amenorrhœa, and the time of return always from five to six weeks. She is now thirty-five years old. At seventeen years she had chorea, which had lasted until now, in conjunction with other distressing nervous symptoms, as stammering, convulsions, etc. When a schoolgirl she suffered much at times from pain and a sensation of weight in the hypogastrium, and much discomfort in walking. At such times it afforded her great relief to place her hand in her pocket and

support the abdomen. About four years before she had distressing head and other nervous symptoms, a description of which I give in her own words: "Among the first troubles was that the floor would not keep still, but was a succession of billows whenever I began to walk; then I carried a brick on the top of my head, that increased in size and weight, till it seemed to press all the life out of me almost; and around and across that brick was a band of iron, hot, about the width of my two fingers, drawn tighter and tighter, until it would become beyond my capacity of endurance. Or at other times, my head would be as light as eider-down, and feel as if it was flying off into space. At long intervals I had a real headache, agonizing; but usually, in the ordinary sense of the word, I had no pain. At times the left side of my head and face and throat would twitch violently, and my left arm and right leg from hip down would be so numb I could barely move the limbs, and my tongue and throat would feel as if thousands of pins were sticking into them. And I first suffered with choking spells; am still subject to them. Invisible hands would grab me in various parts of my body; and all over me, inside and out, worms held high carnival, and disported themselves riotously. And, oh! the overpowering flashes of heat and blinding flashes of light, brighter than any noon-day sun; and the sights I saw! the double vision till I could not know which

was the object and which its double. Now and then I would be nearly blind. I could not read for months, and if I had tried could not have remembered."

These distressing symptoms lasted until a little more than two years before I saw her, when they culminated in violent convulsions, lasting for six weeks almost continuously, characterized by extreme opisthotonus, the mind clear always, patient laughing, screaming, or singing songs. She suffered much at this time from lassitude, and said she always felt much rested when the convulsions passed off. She was confined to the house eight months by this attack. The diagnosis in her case was *spinal irritation*, and paralysis was feared by her physician and friends. When she came under my care I found the following symptoms present: Patient intensely nervous; involuntary twitching of the muscles of the face, neck, and upper extremities; stammers in talking at times; sleeps badly at night, not more than three hours generally; little appetite, and suffers much from acid stomach; distressing vesical irritation; bowels generally regular; some dragging sensations and weight in the hypogastric region, and pain in the small of the back. She for some time had profuse leucorrhœa, but in the last six or eight months it had given place to a thick, ropy, tenacious, mucous discharge. Menstruation irregular and very scanty, lasting four

days, but amounting to not much more than a *show* the whole time, the discharge being sometimes a light pink color, and sometimes resembling coffee grounds, and very offensive to herself. She had never suffered any pain or passed any clots, simply because the discharge had always been too scanty. Great exacerbation of the nervous symptoms at each period. Walking up stair-steps or any distance causes her much discomfort.

Physical Signs.—By touch the womb was found displaced, neck soft and flabby, upper portion indurated and slightly tender. Examination with speculum showed a conical, highly colored os and cervix; the probe decided anteflexion. As preliminary treatment two of Warner's Co. Phosphorous Pills (phosphorus, one-fiftieth of a grain; nux vomica, one twenty-fifth of a grain) were administered three times a day after meals; to use twice a day douche of hot water, as hot as could be borne. Her period came on the 1st of May, lasted four days; she was much more comfortable as to nervous symptoms, having none until the third day.

May 9th, while under chloroform, I made a posterior section of the cervix uteri (as described in Thomas, p. 327, 1st ed.), except that the cotton plug placed in the divided cervix was saturated with a solution of liq. ferri persulphatis instead of glycerine, to prevent hemorrhage. She had a normal period on May 28th, lasting six days, flow more co-

pious, and period more comfortable than ever before; *no nervous symptoms*. She had severe pain on the day before the flow set in, from the accidental injection of water into the womb. She returned home on June 11th cured.

Complications may arise in the form of hemorrhage. I had one case in which the patient was of a hemorrhagic diathesis, that required tamponing of the vagina for ten days or more. In another, on the second day there was secondary hemorrhage, and inspection revealed the coronal artery of the cervix spirting freely. Application of an iron styptic contracted it instantly. In one of my cases the benefit was only temporary, and subsequently a second operation was required *for the removal of a wedge of cicatricial tissue from the former*, resulting in cure. It was as follows:

Case XIV.—Miss H. T., aged 25 years, single, begun to menstruate about her 16th year. Health bad for a year or two before coming under my care. She had all the symptoms of obstructive dysmenorrhœa, incapacitating her from the performance of any household duty. Menstruation came on each month regularly, but she suffered intensely. Vaginal examination proved an anteflexion and endometritis (corporeal) the source of her suffering. After suitable preliminary treatment a posterior section of the cervix uteri was made. The result was all that could be desired, and for eighteen months she

seemed to have been perfectly relieved. Then she began to suffer again. The cervix was dilated with a sponge-tent, but the result was not satisfactory. Her appetite and digestion became impaired, headache was common, and at the time of the period she was obliged to keep her bed. At the end of another year her sufferings at the time of the period were agonizing. Pulse thready, countenance pinched and anxious, nausea, agonizing pain in the abdomen seeming to encircle the waist, flow scanty and dark. Vaginal examination revealed the former incision entirely filled up by a wedge of dense, inelastic, cicatricial tissue. It narrowed the cervical canal, and caused distressing reflex symptoms by pinching the ultimate nerve filaments by its continuous contraction. Assisted by my friend, Dr. John R. Wheat, I removed all of the cicatricial tissue, and she made a good recovery with entire relief from the distressing symptoms which she had so heroically borne for so long a time before.

I might multiply examples if it was necessary. The advantage claimed for the incision of the cervix is that it is *much* more permanent, and consequently the relief more complete. I am much opposed to the process of dilatation either by tents or bougies, as I believe that such treatment is attended by greater risk than incision, and does not hold out the hope of as permanent relief, because the tendency to contraction is infinitely greater.

Of course I would not be understood as applying this opinion to dilatation for the purpose of exploration. Dr. Lombe Atthill (Braithwaite, January, 1877, p. 220), after speaking of the little danger of dilating the cervix uteri as the result of a large experience, says that investigation of the records of the cases in which serious or unpleasant symptoms followed the attempt to dilate the uterus they "generally occurred when practised—1st. Either for the relief of dysmenorrhœa depending on the existence of a narrow cervical canal; 2d. When the cervical canal is encroached on by a fibroid of large size and unyielding structure; 3d. When the process has been attempted to be carried out *rapidly by means of metallic* dilators; or, 4th. When it has been protracted over several days." He adds further, "I have therefore, in order to guard as far as possible against the serious results recorded by others as following attempts to dilate the uterus, laid down for myself the following rules, which I recommend with confidence to others: 1*st. Never to dilate the cervix uteri for the cure of dysmenorrhœa or sterility, depending on a narrow cervical canal or conical cervix; 2d. Never to dilate in cases in which a large and dense intramural fibroid presses on and partly obliterates the cervical canal; 3d. Never to use metallic dilators of any kind*, but to choose for the purpose either sponge or sea-tangle tents, which expand slowly and gradually; 4*th. Never to continue* the

process of dilatation for *more than forty-eight hours*" (Italics mine). With respect to the first of these rules, I look upon the treatment of what is termed "mechanical dysmenorrhœa" by dilatation as being altogether a mistake. I doubt if any permanent benefit ever resulted from it, while in several cases grave symptoms, and in one death, have to my knowledge followed the attempt. Dr. McLane advises against the use of any method of mechanical dilatation and endorses the slitting method (Goodwin, "Dis. of Women," p. 317).

Now a word as to the use of the intrauterine stem-pessary. *I am opposed to it.* I cannot understand why it should not be a source of irritation, and thus lay the foundation for more serious trouble than that which it is used to relieve, nor is it a procedure unattended with danger. This fact is proven, for many gynæcologists of large experience in its use have abandoned it.

Ovarian Dysmenorrhœa.—These are distressing cases, the suffering often indescribably great. The cause may be functional derangement of the ovaries, or there may be organic disease. The presence of pain in the ovaries at the time of the flow may be somewhat marked in those cases in which it exists in conjunction with obstructive trouble, but the intensity of the suffering, attended by thready pulse and cold extremities, nausea, and tenderness over the ovarian region, will enable us to clear up all

doubts. The flow of blood may or may not be scanty, the prominent symptoms will be intense pain about the hypogastrium, and in the right or left iliac region, or both, with more profound disturbance of the nervous system than we usually see in the other forms of dysmenorrhœa. In the simplest cases these disturbances only occur at the time of the period, but when the trouble has lasted sufficiently long to become chronic and aggravated the suffering extends through the interval. The ovarian pain in these cases is persistent and well marked, radiating from the ovary around the back and extending down the thigh, and sometimes even down the leg. When atrophy of the ovary takes place, especially a well-marked submammary pain on the left side is present (Tait).

The treatment of these cases resolves itself into that which is palliative,* and curative. The latter is to be hoped for in those cases which are taken in hand early. The persistent use of hot hip-baths for several days preceding the period, a tonic treatment of tinc. ferri chloridi, increasing the dose a few days before the period, and continuing it until its end, or an iron-and-aloe pill may be given. It is well in those cases where the ovary is faulty in development or atrophied to recommend *marriage*, for while it may not effect a cure, the stimulus of

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* Hypodermic Muriate Cocaine, 4 per ct. sol., 3 to 5 gtt. Dr. Jno. Forrest, *Med. News*, Jan. 10, 1885, p. 55.

the sexual relation will tend to a fuller development of the organ, and create a diversion for the nerve irritation, which will at least tend to improvement of the general health of the patient. We shall leave a fuller consideration of this subject to the next chapter, where we propose to discuss more fully diseases of the ovaries.

CHAPTER VI.

THE OVARIES AND THEIR DISEASED CONDITIONS.

THE ovaries are rarely diseased so seriously as to involve life, yet the affections to which they are most liable, and which are common in occurrence, are such as are attended by much suffering to the patient. The importance to the function of reproduction that they should be normal in condition is reason why, perhaps, more interest should centre around them than any other organs in the economy. It may be well, before entering upon a discussion of the pathological conditions of the ovaries, to glance briefly at the physiology of the function of ovulation, even though in an earlier chapter we have considered the physiology of the menstrual process. We cannot make too prominent the anatomy and physiology of these organs, for the more intimate our knowledge of the normal organ, the more accurate will be our deductions in the consideration of the pathological conditions of the ovary.

Early in intrauterine life the development of the ovary begins as a blastema on the Wolffian body. Though widely different from the testicle in after-life, in the beginning it bears a striking analogy to

this gland, an analogy which, to some extent, holds good afterwards in its anatomical development, physiological processes and pathological conditions. Unquestionably the development of the ovary is a lower stage of development than that exhibited by the male organs of generation. It has a peritoneal covering, forming a fold which constitutes the broad ligament. At birth the ovaries occupy the same relative position which they retain in a state of health in afterlife. Waldeyer and Leopold have asserted that there is no peritoneum posteriorly. This being true it has become incorporated with the underlying coat, forming the tunica albuginea of afterlife (Tait). Processes or trabeculæ are found extending all through the gland in all directions. In these cells are formed ova, which make their way to the surface, rupture, and discharge their contents either into the duct, which will convey the newly discharged ovum into the uterine cavity, or, missing this, lose it in the peritoneal cavity. The cavity left after the extrusion of the ovum fills with blood, and forms what we know as the Graafian vesicle. Now various conditions may interfere with this normal process and facilitate the development of a diseased condition. The left ovary lies in front of the rectum and the right is in close relation to a coil of intestine which may occupy Douglas' cul de sac. The ovarian ligament attaches them to the uterus, and in structure is composed of contractile

tissue derived from the uterus itself. The nervous and vascular supply is from between the folds of the broad ligament, and is analogous to the supply to the male testis in its origin and distribution, coming from the spermatic vessels, and the nerves from the renal plexus of the sympathetic. The ovaries vary in size at different periods of life, and Mr. Tait gives a table * by Henning which shows them largest during the six weeks succeeding labor. This may have been due, says Tait, to some pathological condition, but it is curious to note the fact that horse-breeders claim that mares are more easily impregnated soon after the birth of a foal than at any other time. Now the ovum is ruptured and discharged into the uterus through the gland-duct, immediately after the excitement of menstruation or coincidently with it. The cell-growth in the ovaries is diminished to its premolimenal state by pregnancy, and though diminished by the occurrence of the menopause, it never is entirely suspended. The same is true of lactation, though to a less extent. The cessation of this function (though the cells are immature) comes only with the end of life. The ovary is a gland similar to other glands as to its histological elements. Only the cell-nuclei which are formed and extruded between puberty and the climacteric possess a peculiar power. This

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* "Diseases of Women," p. 116.

is the simple physiology, and its very simplicity simplifies the pathological conditions which concern the gland.

The common diseases of the ovary are those of perverted function, which function may be incomplete in its performance, or, if complete, deranged. Organic disease may occur, cystic degeneration, inflammation, or carcinomatous disease; but though these have been seen it is very rare for any disease of the ovary to take place prior to puberty. When the girl arrives at this important period of her existence there is maturation and discharge of the ovum at regular intervals, and conditions present favorable to impregnation under consummation of the sexual relation. Coincidently we have seen in a previous chapter that there is a hemorrhage from the mucous surface of the womb. Whether the maturation and discharge of the ovum stands in the relation of cause to this phenomenon is not fully determined by physiologists. Removal of both ovaries has stopped, finally, the flow, and one only being removed, the remaining one being healthy, the function has gone on normally. Impregnation, however, on the other hand, has repeatedly taken place, where there has been no appearance of the flow after the first impregnation, and large families of children have been borne. I have observed this fact. Mr. Tait says,* a regular occurrence of the

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* "Dis. of Women," p. 118.

flow has been observed, where both ovaries have been so diseased as to place beyond doubt the evolution of ova, and this for months. A rational explanation of this is the *most modern theory, that the influence causing the flow springs from the Fallopian tubes.* At puberty the nutrition of the ovary is changed, and it consequently is involved in the general state of hyperæmia, involving all of the generative system at this time.

The function is established at about fourteen to sixteen years of age, earlier in warm climates, and in those girls who spend much time in the open air and are simple and primitive in their habits. But in the more fashionable walks of life imperfectly formed ova are thrown off, the reflex influence on the uterus is deficient, the refinements of life, a tendency to struma, or some cause which lowers the girl's vital energies, interferes with proper ovarian development, and the establishment of the function is delayed, sometimes not established at all, or, if established, lasts only for a few years and ceases permanently. These cases are cured by marriage, if they bear children; in many cases benefited if they do not; but this is the direction in which most benefit is to be looked for. If they remain single, ovarian dysmenorrhœa develops at from 25 to 30 years old, and they are pitiable sufferers till relieved perhaps by a premature climacteric. These are marked cases, too, because very slight

causes, unusual exertion, mental strain, sudden fright, or even the existence of the simplest chronic disease, will interfere with the function, and cause it to be suspended for months.

Mr. Tait says: "Ovarian amenorrhœa or dysmenorrhœa, to a less extent, is a temporary resumption of the infantile condition of the ovary" ("Dis. of Women," p. 119).

We find cases in which the ovaries are rudimentary and the uterus well developed, or, conversely, the uterus rudimentary and the ovaries fully developed. This latter condition is more rare. The ovary may be displaced, and along with it may be a displaced uterus. The suffering in these cases is sometimes so great as to justify ovariotomy. This displacement may be exaggerated into a complete hernia of the ovary, the gland being easily recognized lying in the patient's groin. I have seen an example of this in an out-patient of the college dispensary, in the past year. Handling or pressure of the gland gives rise to sickness of the stomach, thus making the diagnosis easy. These hernial ovaries should be excised. This displacement is very rare. Mr. Tait says he has had no experience with it ("Dis. of Women," p. 122). He mentions a singular case of ovarian displacement. We give the history of the case in his own words: "The tumor was of very large size, and for its removal the usual median incision was made from the umbilicus to

the pubes. No difficulty was experienced until I attempted to drag the upper part down through the incision, when I found a broad band of union extending upwards from the umbilicus. The peritoneum passed from the abdominal walls on to the tumor, just as it does on to the rectum, and the union was evidently not merely inflammatory adhesion. On dividing the peritoneum I found that the common tendon formed part of the cyst wall, and that the fibres of the rectus abdominis muscle were inserted into the cyst. The round ligament of the liver ran through the cyst wall to the umbilicus; and on being cut through the umbilical vein contained in it bled profusely, and had to be tied. Very careful dissection had to be made to remove the cyst, and when it was completed it was found that a large triangular gap was left in the abdominal wall, covered only by skin, and having its base at the umbilicus and its apex at the xiphoid cartilage. This gap was closed by subcutaneous stitches, and the patient made a good recovery, and has since been safely confined of a living child." *

Let us now turn to the consideration of the various pathological conditions which come under our observation as important factors in many forms of deranged menstruation. There may be distressing ovarian troubles, simply of the nature of reflected

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* "Dis. of Women," p. 122.

sympathy with a diseased condition of the lining or muscular tissue of the uterus. We observe cases of this character where uterine disease has been allowed to go on for a long time without treatment, or when treatment has been inefficient or improper. Unquestionably the treatment to be instituted for the relief of uterine disease must in many cases be determined by the disposition and character of the patient. We see cases which will bear active treatment, which we may drive towards health, as it were, but some women are in their whole organism of so sensitive a mould that they always need coaxing towards health. Harsh treatment but aggravates the malady. Persisted in, it gets up serious ovarian sympathy, and the case is complicated and made more difficult to manage by the fact that the morbid conditions of the uterus and ovaries act and react on each other. This may be the starting-point for *ovarian hyperæmia*, and from the hyperæmic condition may be developed *acute* or *chronic ovaritis*. Now it is also true that this hyperæmic condition may be due to a precociously developed ovary, in which there is excessive ovarian activity. A prominent manifestation of this is menorrhagia. A prematurely and fully developed girl may begin at puberty to flow excessively. A continuance of this in time brings failing general health, indicated by lassitude, loss of appetite, hysterical symptoms; the flow, at first painless, now causes suffering, and pressure

over the ovary about the time of the period reveals tenderness, and causes faintness and a sense of nausea. When the flow is established, slighter pressure over the ovary will develop the same symptoms. This tenderness disappears after the period. If these cases marry, the stimulus of the sexual act, or the processes of pregnancy, seem to exert a safe derivative action for the relief of a pathological condition. The result here points us to an explanation of the condition which we find in another class of patients, namely, in those women of more than usual sexual appetite, who have become widowed while yet in vigorous womanhood. They are suddenly cut off from the normal gratification of the sexual appetite, and the strain falls upon the ovaries, and results in a menorrhagia which is often alarming to the patient and difficult to control. In its train comes impairment of the general health, and especially do they suffer from all sorts of distressing nervous symptoms. If a specular examination be made, oftentimes the sexual excitement will be both manifest and for a few moments uncontrollable, amounting almost to a complete orgasm. I have at the present writing a case under treatment, where there is excessive menorrhagia, and the distressing nervous symptoms, etc., above described, and which has required careful management to control the hemorrhage. In this case, as the result of long-continued and excessive hemorrhage, I found relax-

ation of the uterus and some circumscribed endometritis just above the internal os, indicated by exquisite sensitiveness on applications being made to the cavity of the uterus. The treatment of these cases is freedom from perturbing influences, tonics in the form of hypophosphites and iron, with local application of some preparation of iodine to the cavity of the womb twice a week, vaginal douche twice daily of warm water, *and perfect rest* at the time of the molimen. Under this treatment the case above mentioned has been almost restored to health, and her ultimate recovery is assured.

If, on the other hand, we find this ovarian hyperæmia in a young, precociously developed girl, she should be taken from school, and made to live in the open air. Counter-irritation, with iodine over the ovarian region, will prove of benefit, but she should under no circumstances be allowed to take exercise to the point of fatigue, and to avoid this, passive exercise, as in riding, is much better for her than walking. Mr. Tait recommends the use of ergot before and after the period, with a moderate dose of bromide of potassium during the intermenstrual period, in the morning and at night.* I prefer the bromide of ammonium in combination with the tinct. of belladonna, or tinct. of cannabis indica—grs. x. of the ammonium, with gtt. xx. of

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* "Diseases of Women," p. 126.

either tincture, in water. There seems to be a selective affinity in these agents for the uterus and ovaries; indeed, for all the pelvic viscera.

While attending physically to these cases very much is to be done by moral and mental training. The girl should be kept in an atmosphere of purity, and separate from all associations or scenes which might react upon the sexual system. The influence of the licentious, and to say the least, sensational, and sometimes lewd and vicious plays put upon the boards of the theatre in these modern days should be most religiously avoided. The character of the literature which the girl reads should be carefully scanned, and light novels which place vice in an attractive light, or are filled with sensational love scenes, should be positively forbidden as harmful. Social intercourse with the other sex should be encouraged, but under such restrictions that both may be ennobled and refined by the contact. The girl should learn the story of her high and holy destiny as a woman, and a sacred refinement should be instilled into her being by the tact which is the offspring of a mother's affection.

Ovarian hyperæmia, as the result of the excesses in the newly married, is sometimes observed, but this is true only when pregnancy does not take place. A delicate woman married to a vigorous man may be a sufferer for several years from menorrhagia, though prior to marriage her health may have

been perfect. Connection is followed by pain in the ovaries, tenderness on pressure, and a sense of tenesmus of the uterine system. These symptoms may last for hours, till at last the poor woman's sufferings become so great that she abhors the marital embrace.

This affection is very common with young prostitutes, often ending in chronic ovaritis. The Fallopian fimbriæ become adherent to the ovaries, and ultimately there is atrophy of all the sexual structures. Ovarian hyperæmia may pass into acute or chronic ovaritis, most commonly the latter, acute ovaritis being due to *injury*, *sceptic poisoning* following parturition, the exanthematous fevers and acute rheumatism, and gonorrhœal infection. An injury, such as a blow upon the abdomen, may result in acute ovaritis. During the puerperium the woman may have a sharp rigor, followed by high fever, limbs drawn up, anxious expression of face, great tenderness over the ovary, nausea; abscess may result, and relief comes when the matter is evacuated, which may be done per vaginam, it being easy to detect the enlarged and suppurating ovary. Acute ovaritis occurring from any other cause will manifest itself by the same symptoms with very little modification. The acute infection of gonorrhœa may attack the ovary, and partakes of the same nature as epididymitis in the repelled gonorrhœa of the male. It usually results in destruction of the gland, and if

both ovaries be affected may result, in all probability will, in permanent amenorrhœa, and not infrequently in permanently impaired health.

Ovarian neuralgia may occur in women approaching the menopause. It is characterized by intense lancinating pain in the region of the ovary, paroxysmal, and often involving both ovaries. It must be relieved and controlled by anodynes, and by counter-irritation, but the medical attendant should discountenance all resort to alcoholic stimulants for the relief of ovarian or neuralgic pain. It is this way that dram-drinking in woman is often established, and grievous harm, both physical and moral, befalls the patient in the end.

Hypertrophy, or *hypertrophic enlargement of the ovary in all of its various forms*, may constitute, and indeed sometimes is, the obstacle to the proper performance of the function of menstruation. One ovary or both may be involved. It does not come within the scope of this work to treat of that form of cystic degeneration which constitutes true ovarian tumor. As elsewhere in the body, carcinoma may develop, but unless recognized at a very early stage no hope can be held out to the patient of relief. Hyperæmia, or chronic inflammatory trouble, may result in enlargement, and may even eventually, by this means, destroy the function entirely. The enlargement is either fibrous or follicular. The ovaries are found hard and nodulated. Menstruation

is very scanty or entirely absent. There is a follicular atrophy, or arrest of development of the follicles of the ovary, and a cirrhosis of the trabeculæ (Tait). These are not promising cases for successful treatment. They need active counter-irritation, with tonic and alterative treatment to arrest the trouble, but it is very unusual that the patient should ever be restored to perfect health. There may be adenoid enlargement, dermoid cyst, etc., found as the diseased condition of the ovaries. Simple displacement may occur, and be a source of great agony to the patient and interfere with the menstrual function. Should no relief come for the various conditions from judiciously applied tonic and alterative treatment, combined with properly applied counter-irritation, *then* resort must be had to normal ovariotomy, after the full risks of the operation have been explained to the patient. For a detailed description of the operation we refer the reader to the standard works on surgery or gynæcology.

Dr. Battey points out the following as the indication for removal of the ovaries: "Oöphorectomy to determine the change of life, and the change of life for any gross disease which is incurable without it, and which is curable with it," or, ask three questions: "1st. Is it a grave case? 2d. Is it incurable by any of the resources of art, short of the change of life? 3d. Is it curable by the change of life?"* Tait at-

* A paper read before the Internat. Med. Congress in 1881.

taches importance to removal of the Fallopian tubes as well as the ovaries.

The fact that menstruation *sometimes* regularly appears after removal of the ovaries is no argument against the operation. Some of the ablest gynæcologists believe it to be due to irritation of some nerve centre, or it may be due to the fact that the Fallopian tubes also have not been removed. The assertion that the subjects become masculine and lose their sexual appetite, etc., is not borne out by the facts. Indeed, in Dr. Battey's cases, the improved health has brought added beauty and increased womanly attraction.

CHAPTER VII.

VESICAL IRRITATION.*

THE simple question of irritable bladder is one of great vexation to the physician, and the affection is one which entails much distress and suffering on the patient. To determine the remedy most applicable for its relief and cure necessitates the closest scrutiny into the cause which has given rise to the trouble. Undoubtedly, women are the most frequent sufferers who apply for relief. But all of us have seen vesical irritation in children, due to rectal irritation from thread-worms, the irritation being reflected from the rectum to the bladder, a class of cases speedily relieved by the injection of the bitter infusion of quassia into the rectum. Again, in male children, reflected irritation from an elongated prepuce, circumcision being the remedy here. In the adult, fissure of the anus, hemorrhoids, fistula, sexual neurasthenia, and in men enlarged prostate and stricture may all manifest themselves in part

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* Most of the matter of this chapter is the substance of an article published by the author in the 7th No. of the xvi. vol. of the *American Journal of Obstetrics*, 1883. It embodies so fully my views that it is freely quoted.

by a reflex vesical irritation, causing much suffering to the patient.

These may be denominated eccentric causes, centric causes being those which, to use the term in its broadest sense, pertain to the urinary system, bladder, kidneys, or urethra, to a portion of that system as an excretory apparatus, but more especially to the bladder as a reservoir for the urine till it can be normally voided.

To illustrate: there may be a separation from the blood by the kidneys of excessive amounts of oxalic acid, or of the urates; there may be a diabetic condition; there may be organic disease of the kidneys themselves; or there may exist cystitis, acute or chronic, primary, or from the presence of stone; or there may be a reflected irritation from the urethra, where stricture exists, causing agonizing pain, from spasm of the vesical sphincter, brought on by frequent attempts to void the urine, and the inability to fully empty the bladder, the urine becoming decomposed, and thus a secondary cause of trouble. These are troublesome cases. In the female, *caruncle* in the urethra may give rise to most annoying vesical irritation, and as the part involved is contracted in extent it is often the case that this affection is overlooked, and all remedies prove alike unavailing, causing the attendant physician much anxiety and solicitude.

But I purpose to discuss solely the vesical irrita-

tion occurring in women, and the causes to which it is to be attributed, with a view to solve the problem of its management and cure. Now in these cases a correct diagnosis of the cause is of the utmost importance.

Is it due to organic disease of the bladder, or is it functional, or emotional; or is it due to reflected irritation from disease of the os and cervix, or the existence of uterine tumors or displacements; or what?

One of the most common sources of vesical trouble is that which is caused by pressure from the gravid womb, especially when the woman has borne many children; the abdominal walls, in consequence of frequent stretching, have lost their resiliency, and weight upon the fundus of the bladder causes a constant desire to urinate, the patient only being comfortable when in the recumbent posture, allowing the uterus to drop back, and remove the pressure from the bladder. I am in the habit of advising for the palliation of these cases the wearing of a properly adjusted bandage, gored and sloped so as to fit the hips snugly, and thus strengthen the relaxed abdominal walls by the support of the womb externally. Of course permanent relief does not come to these cases until after confinement removes the cause.

But the most common of all causes is some uterine disorder affecting the bladder directly, or

through reflex sympathy. The treatment required in these cases is to remove the cause by the cure of the uterine malady. No direct treatment of the bladder is necessary, and if relied on alone will only prove unavailing. Take a few cases in point:

Case XV.—Mrs. ——, from Halifax Co., Va., came to me some years ago complaining of great vesical irritation, and saying that her physician at home said that she had "chronic inflammation of the bladder," but the trouble only grew worse. She gave the history of a natural twin-labor about a year before, but with a bad getting-up; had suffered much with pain in the back and a profuse leucorrhœa. Physical examination revealed an enlarged cervix and ulcerated os. Under appropriate treatment this condition was soon relieved, and she returned home, well of all vesical distress without a single remedy having been directly addressed to the bladder.

Case XVI.—Mrs. B., of this city. She had been suffering for some time great distress from the frequent desire to pass her water, and in addition had extensive eczematous eruptions on her arms and legs, with copious leucorrhœa. Examination showed ulceration of the os and endocervicitis. Treatment addressed to the cure of the uterine ailment soon relieved the other troubles.

Case XVII.—Mrs. R., also of this city. When called to see her she was in a most pitiable plight.

Like the woman in the Bible, she "had suffered many things" of many physicians, and was rather worse off, the entire treatment having been directed to the bladder, one diagnosis having been *stone* (*! !*) and chronic cystitis! She was found to be suffering from aggravated cervical disease, with hemorrhoids as a complication. I was unable to discover any lesion of the bladder. Treatment addressed *entirely* to the relief of the womb-trouble in due time restored her to health, which has continued up to the present time, and in the past year she has borne a remarkably fine healthy baby.

The above cases will suffice, though they might be multiplied. In my experience, endocervicitis, with its consequent ulceration, has been more frequently the cause of vesical irritation, perhaps because this trouble is the most frequent of the uterine troubles with which we have to deal. The point I would make is the suggestion that *this lesion of the cervix, or laceration, or carcinomatous disease*, or, in other words, *any lesion of the cervix, causes, because of its greater nervous sensibility, vesical irritation much more frequently than when the disease is located in the corporeal lining, or in the substance of the womb itself or its appendages.*

Of course we see many cases which are due to what we may denominate a mechanical cause, where there is pressure from a displaced womb, or where there is fibroid or other tumor of the womb.

These mechanical causes are, of course, to be relieved by a properly adjusted pessary. Now we have another class of cases, *emotional*, occurring in those women who are run down, as in school-girls, where the nervous system has been overtaxed by study, and they have become hysterical and chlorotic, or in married women suffering from sexual neurasthenia, brought on by abuse of the sexual relation. Change of air and scene and an active ferruginous and tonic treatment are the indications in these cases.

Now the two classes of cases that we have just discussed are in striking contrast, and demand, as we have seen, very different management. The history of the cases and general appearance of the patient enable us to distinguish them. With regard to the first, we cannot err if we, in the beginning, make a thorough examination of the womb for trouble which manifests itself by a reflected irritation of the bladder. In the second, we have cases which can only be aggravated by any local interference whatever.

The most troublesome cases of vesical irritation are due to vesical catarrh, caused by pinching the bladder in protracted labor between the head of the child and the pubic bone, or from overstretching by prolonged retention of the urine, or by the presence of stone. If the irritation be due to outside causes (uterine), great relief will be experienced

from the recumbent posture; but where due to vesical catarrh this will not be the case (Goodell).

It may be that irritation may be caused by some lesion of the vesical sphincter, as fissure, occurring during labor; but I am not aware that any one has been able to demonstrate its existence except by inference from the results of treatment by urethral stretching.

If the cystitis be due to the presence of stone, cure it by removal of the stone; if the result of a protracted labor, nitrate of silver, chlorate of potassa, borax, boracic acid, quinine in solution, injected into the bladder, have been recommended; but I can but condemn the use of *the nitrate of silver as being too painful*, and liable *to aggravate the trouble*. In any event, the bladder should be well washed out with warm water before any topical remedy is applied, and the addition of boracic acid in smali quantity, or carbolic acid, or even common chloride of sodium, will cleanse the vesical lining of mucus, etc., so that the remedy will come into direct contact with the diseased surface. Quinine and extract of belladonna are valuable remedies, given in full doses, in the most acute stage. When the trouble becomes more chronic, prolonged administration of the muriated tinct. of iron and the liq. acidi arseniosi will be of great benefit. Infusion of triticum repens or uva ursi and hops are valuable remedies; and Dr. Stover of this city rec-

ommends as invaluable the infusion of broom-corn seed (℥ ij. to aq. Oj.).

If medication fails, much may be hoped for from dilatation of the urethra, care being taken not to overstretch it, or incontinence of urine may succeed to the vesical trouble, and prove equally as unmanageable and distressing to the patient. Dilatation is employed upon the same theoretical principle as in anal fissure (Goodell). Constant drainage by a properly adapted catheter, as the Skene-Goodman, may give great relief, and even result in perfect cure.

All of these means failing, our last resource is an artificial vesico-vaginal fistula, as devised and recommended by Emmett. This is considered one of the most satisfactory operations in gynæcology. Dr. Philander Harris has invented a fenestrated staff and tenaculum for making the opening more readily (*Amer. Jour. of Obstetrics*, Mar., 1883, p. 271).

In conclusion, let me emphasize the assertion with which I started, namely, that these vesical troubles are only to be intelligently treated by making in the outset the most thorough examination into all facts which may have any bearing on the diagnosis, and this being accurate and perfect in all respects, we may promptly and boldly administer such treatment as is best calculated to remove the cause of irritation and crown the patient with the joy of a perfectly restored health.

CHAPTER VIII.

PELVIC CELLULITIS OR PARAMETRITIS.

APPARENTLY the affection of which this chapter treats has nothing, or at least remotely, to do with any disorder of the menstrual flow, but a moment's consideration convinces us of the deformities and displacements of the uterus, which may, and often do result as a consequence of it. It is an affection of too grave a nature not to merit consideration in a treatise on menstrual disorders, and one attended by so much suffering as always to give solicitude for the future welfare of the patient.

It is liable to be confounded with perimetritis or pelveo-peritonitis. It must be borne in mind that pelvic cellulitis or parametritis is an inflammation of the pelvic connective tissue, while pelvic peritonitis is an inflammation of the serous covering of the uterus. Extension of the inflammation from the pelvic connective tissue to the peritoneum may place the two affections in the relation of cause and effect. There is no more important affection of the generative organs to which woman is liable.

It is a nice question in diagnosis to be able to distinguish between parametritis and pelvic cellu-

litis. The history of the case, and especially, if she be a married woman (or prostitute), the history of a previous gonorrhœa, which is thought to be a fruitful cause of the former, will aid us in making an accurate diagnosis. Nœggerath, of New York, holds that gonorrhœa in men is an incurable affection, and that being latent, in case of marriage, the wife soon becomes infected. Schrœder says his views are extravagant, still that he is forced to admit that chronic inflammatory affections of the genital organs are only too apt to ensue as a consequence of gonorrhœa (Ziemssen's Cyc., vol. x. p. 447).

Pelvic-peritonitis may occur as the result of a blow upon the abdomen, or in connection with a disordered menstrual function, notably amenorrhœa or dysmenorrhœa, or it may arise from trauma of some kind, as some surgical interference with the uterus, the introduction of a sound, etc. Carcinomatous or tubercular disease in the peritoneum or omentum may be a cause from which it develops.

This inflammation being slight in character, no ill effects are left behind it; but pseudo-membranes are apt to be an important factor, and cause adhesions to form with adjacent organs. Sometimes there is a collection of serum or purulent matter which tends to accumulate in Douglass' pouch, where it awaits evacuation either by the surgeon

or an effort of nature. If it should be evacuated by the surgeon, of course it must be *after all the acute symptoms* have subsided, and he should take care not to wound the intestine, a coil of which may have found its way to this locality. It may open into the rectum or bladder, and be a cause of recto-vaginal or vesico-vaginal fistula.

We have only desired here to refer incidentally to parametritis for the purpose of contrast with the affection under consideration. Pelvic cellulitis is really a phlegmon of the pelvic connective tissue. It may occur from the extension of the inflammation from a parametritis; it may be the result of cutting operation of the uterine neck, dilatation, forcible, or by tents, or from the absorption of septic matters. It may, in fine, result in any case where the epithelium is broken and septic materials come into contact with the abraded surface of the cervix, or it may result from abortion or parturition or injury in coition.

It is pathologically a purulent œdema of the connective tissue of the broad ligaments, extending up to the iliac fossæ, and sometimes as high as the kidneys. There is an exudation between the uterus and bladder or rectum, though this is met with rarely. The swelling and effusion is found, as a rule, lower in the pelvis than that the result of parametritis. The tendency is to the formation of abscess, which usually points at some favorable

spot, where it is easily evacuated. The trouble, as a rule, is acute, sometimes ushered in with a chill, with febrile reaction, high temperature, a sense of pain or weight, or distress in the pelvis. There may, probably will, be loss of appetite, languor, etc. Vaginal examination reveals the effusion, a boggy sensation being imparted to the finger. The enlargement is felt to one side, with usually a decided line of demarcation, increased heat and tenderness. If there be pain (much), it is due to the fact that the peritoneum is involved. The pain may extend to one or both lower extremities from pressure on the pelvic nerves, characteristic flexion or adduction of the limb being sometimes observed. Urination and defecation too are performed painfully and with difficulty, with pain in the back.

Only one side may be affected, though it is not uncommon to find both. The consistence of the tumor is at first soft. When the acute symptoms subside it is tender, and finally becomes resistent, rigid, and hard as a board. So soon as pus forms the tenderness reappears, and finally fluctuation can be detected. After this the course is chronic, and usually ends in resorption of the mass. The inflammation may have been so severe as to result in death of the connective tissue. When this occurs the dead tissue must be eliminated before any process of repair can be begun or completed.

Now the bearing of this pathological condition

on the function of menstruation is evident when we reflect that the effusion and consequent enlargement may displace the uterus to one side and to a certain extent distort or obliterate the cervical canal, being thus a cause of dysmenorrhœa, or the diseased process going on in the pelvis may interfere with the process of ovulation and thus be the cause of amenorrhœa. Again, the congestion about the pelvis may extend to the uterine mucous membrane and a menorrhagia be the result. Not only is this true, but, furthermore, the broad ligaments, Fallopian tubes, and ovaries may be involved in the suppurative process to such an extent that irreparable damage may result. The ovaries have been found, *post mortem*, suppurating and the tubes filled with pus. There may be constriction of the tube at both extremities, and it, filled with a sero-purulent matter, forms a tubal dropsy. Pelvic cellulitis may be complicated by endometritis, ovaritis, salpingitis, or pelvic peritonitis.

The affection may run its course in a few weeks and end in resolution or suppuration. When the latter takes place, the pus may discharge itself in various directions—it may be through long sinuses which insufficiently discharge it, and thus the discharge of pus may be kept up as a result for months or years. The direction of the pus may be very eccentric, and thus mislead the practitioner as to the real seat of the abscess.

The affection is to be differentiated from perimetritis, extra-uterine pregnancy, uterine fibroid, ovarian tumors. The presence of much tenderness indicates the complication of the peritoneum, but the subsequent course of the affection will enable us to draw the distinction. The difference in consistence,—being softer,—in shape, the fact that the exudations of cellulitis are flat and more tender, distinguishes them from fibroids. And from extra-uterine pregnancy and ovarian tumors the previous history of the case is an important element in deciding the character of the trouble. The prognosis is rather favorable, but the fact must not be forgotten that general septicæmia may occur, or peritonitis, or some other serious affection, and the case thus terminate unfavorably.

Treatment.—I believe the two great essentials are the copious use of vaginal injections of warm water and absolute rest. In the way of medication during the most acute state quinine, belladonna, or hyoscyamus, in combination with blister over the hypogastrium, and gentle laxatives to keep the bowels open, will fulfil the indications. When pus is formed, resort should be had to a tonic and alterative treatment, such as tinct. of the chloride of iron combined with arsenic (liq. acid arseniosi) three times a day. Thomas recommends that the bowels be kept confined; that in the outset leeches should be applied freely around the anus

or to the perineum, followed by warm fomentations, pain controlled by opium, and commanding doses of veratrum viride, or the tinct. of aconite, should be given. A mercurial purgative occasionally will be of benefit, as it best unloads the portal circulation and tends to counteract congestion.

When abscess occurs, all our efforts, as before hinted at, should be directed to the support of the vital powers, and we should delay opening the abscess as long as possible, in order that the pus may find its way as near to the surface as possible; if more than one abscess, that they may have opportunity to coalesce, and thus when the incision is made there will be as little tissue as possible between the exterior and the cavity of the abscess, and thus the risk of a sinus, certainly a long one, be reduced to a minimum. On the other hand, it may be necessary to open the abscess at an earlier period because of the suffering of the patient. The first point to be remembered is to endeavor to find where the abscess will most probably point. The point of selection is, first, the vagina, next, the rectum, and lastly, the abdominal wall. If the opening is to be through the vagina, the patient should be placed in the semi-prone position, an anesthetic administered, Sims' speculum introduced; if the pus is near the surface, a trocar and canular may be plunged into it and its contents fully evacuated; if it be deep-seated, the scalpel should

be used, and the incision carefully made step by step or line after line until the pus is reached. Caution should be exercised that no large blood-vessel is divided. If the opening is to be through the abdominal wall it is well to make an issue first with nitric acid, so as to secure adhesion of the peritoneal surface to the sac of the abscess, and thus avoid the discharge of pus into the peritoneal cavity. The trocar may be plunged through the issue made by the acid with perfect confidence that the pus will be freely evacuated without escape into the cavity of the peritoneum. All shreds of dead connective tissue should be removed and the cavity washed out with a weak solution of carbolic acid, to stop if possible any further suppuration, and this should be done twice daily. Existing sinuses should be treated by dilatation or by the knife, and any urinary or fæcal fistulæ should be appropriately treated to effect a cure, always bearing in mind one important fact, namely, the very great importance of as perfect cleanliness as can be obtained.

CHAPTER IX.

THE NEUROSES OF THE MENSTRUATION.

THE intimate connection of the generative system with the other organs of the body through the nervous system gives much interest to many of the affections which we are called upon to remedy, and makes more or less obscure the diagnosis of the true cause of indisposition. It is a familiar fact that when the woman is in robust health and every function is normally performed she feels a certain perturbation and discomfort, simply from nervous sympathy during the performance of the menstrual function. The menstrual epoch is a momentous act in the physical being of woman, for does it not form the first link in what may be, under suitable conditions, developed into the chain of a checkered human life?

Now if there be any departure from health, and the element of pain be added, or the factor of too small, or too great a loss of blood, the nervous system, nature's sentinel, stands ready to utter a note of alarm, and give warning that the function is out of gear. This is abundantly true if the derangement be in the ovary, for then the very cita-

del of the procreative function has been assaulted. Consequently, we find that when uterine or ovarian disease exists and has become chronic, hysteria in one or more of its thousand forms is a prominent element in the impaired health of the patient. Or hystero-epilepsy may have taken possession, and run riot with the poor victim, and in this form the very nature of the affection blasting hope and defying often all remedies exhibited with the expectation of cure.

Now while all of these nerve ills are possible, and often result as the reflected irritation from a deranged uterine system, for the sake of humanity and science we must remember just the same may come from other causes which impair the woman's health and subject her nervous system to a condition of "*tire*," which can only be removed by rest, rest from care of all kinds, mental, moral, and physical. Cases of this kind which are subjected to local treatment for the cure of a uterine disease which does not exist are exaggerated rather than relieved, and a treatment that soothes and comforts, that tones up and restores the general health, is such an one as will be crowned with success.

But we do have many nervous conditions and annoying symptoms traceable directly to uterine or ovarian disease, and I believe that we are more apt to see nervous complications when the uterine

lesion is located in the cervix than when it involves other parts of the uterus.

Dr. Fothergill says: "Yet there are associations of the catamenia which are systemic, and which are worthy of more attention than is paid to them. There is much evidence pointing to a rise in the arterial tension, in temperature, in muscular power, going on gradually during the intermenstrual week, culminating in the premenstrual week, and rapidly declining during the catamenial week." If this be true, can we wonder that any derangement of the menstrual function should manifest upon the nervous system the systemic disturbance thus occasioned. It may be that there is only a mild form of hysteria, or it may be a violent explosion in the form of hysterical convulsions; it may be derangement in function of some special sense, as sight, or smell, or taste, or in localized spasm of some group of muscles, in cataleptic conditions, or trances, or some curious nervous manifestation before unobserved. The development, as Fothergill has pointed out (*Amer. Jour. Obstet.*, vol. xiv. p. 46), of a pyretic condition, in which high temperature and other coincident symptoms may cause serious uneasiness and lead to error in diagnosis, and consequently treatment, may be only the outcome of menstrual derangement, and may spontaneously subside when the time of the period is over, being a purely nervous fever.

But it is of more chronic and persistent nervous derangement, taking the ovarian or uterine irritation as a starting-point, that I desire to speak here. Prominent among these troubles is the submammary pain of the left side so commonly seen, sometimes a cause of intense and prolonged agony to the patient, and often found most resistent to remedies. This is commonly due to deranged ovarian function or organic disease of the ovary, and remedies for its permanent cure should be directed to this gland. The hysterical point is a malady with which we are more or less familiar, one causing much suffering to the patient, and obstinately resisting treatment until it is directed to the cure of the uterine disease. The nervous headache, which is always present with some patients at the time of the period, is another example of reflected irritation, and one which has till this day been almost an opprobrium to our art, so rebellious is it often to the remedies addressed to its relief. In some cases the vision is impaired, ptosis of one or both eyelids may be present, and the patient unable to either read, sew, or in any way amuse or divert herself till after the period is past. Occasionally the period will be ushered in by these symptoms. Again, cases are observed where a source of discomfort and distress to the patient is a condition which is described as trance, in which terrifying or absurd visions harass and disturb, yet from which the patient is unable to

free herself. These conditions may precede the period, improving so soon as it is established, or they may be present at the time of the period. The following cases illustrate these latter points. The nervous symptoms in the first of them I have recorded before in Case XIII. Chap. V., but reproduce them here because so well illustrative of the symptoms I am discussing. I quote the patient's own words: "Among the first troubles was that the floor would not keep still, but was a succession of billows whenever I began to walk; then I carried a brick on the top of my head that increased in size and weight till it seemed to press all the life out of me almost, and around and across that brick was a band of iron, hot, about the width of my two fingers, drawn tighter and tighter, until it would become beyond my capacity of endurance. Or at other times my head would be as light as eider-down, and feel as if it was flying off into space. At long intervals I had a real headache, agonizing, but usually, in the ordinary sense of the word, I had no pain. At times the left side of my head and face would twitch violently, and my left arm and right leg from hip down would be so numb I could hardly move the limbs, and my tongue and throat would feel as if thousands of pins were sticking into them; and I first suffered with choking spells—am still subject to them. Invisible hands would grab me in various parts of my body, and all over me,

inside and out, worms held high carnival and disported themselves riotously, and, oh! the overpowering flashes of heat, and blinding flashes of light, brighter than any noon-day sun. And the sights I saw! the double vision, till I could not know which was the object and which its double. Now and then I would be nearly blind. I could not read for months, and if I had tried could not have remembered."

This was a most unusual case, and the subject of it was a woman of intensely nervous temperament and romantic turn of mind, yet it beautifully illustrates many of the nervous features above referred to.

Case XVIII.—Miss S. K., a frail, delicate, nervously constituted woman, came under my care in June, 1884. She had been many years invalided. She suffered with dysmenorrhœa, but not of an aggravated form. Vaginal examination revealed anteflexion and endometritis as the cause of her sufferings. There was, too, a good deal of sympathetic nervous irritation of the ovary. Her periods were usually regular, though sometimes deferred a week after the time of expected recurrence. Each period was preceded by a condition which she called "*trance*," and which usually occurred at night. She described it as a conscious condition, but one in which she was unable to move, and from which she could not sufficiently arouse herself to call for help.

While in this state innumerable little white devils danced about her and ridiculed her. The next day she would be very nervous and have a sensation of extreme fatigue. Then her eyes would become affected, the vision so impaired that she could neither read, sew, or amuse herself in any way. Pronounced ptosis of both eyes, but greatest in the right eye, accompanied by lachrymation, skin cool, moist, and pulse frequent and perturbed, was her general condition. This lasted about two days, when her period was established, at first painful, but afterwards more comfortable, and so soon as this occurred there was general subsidence of all of her nervous symptoms. In December last I made a posterior section of the cervix uteri, with entire relief of all these nervous symptoms, and a comfortable period followed, and, despite a sharp attack of dysentery, she got up with an improved general health. Unfortunately, when she first ventured out of the house the weather was raw and cold. She contracted a severe cold, which produced violent ovarian neuralgia. After this was relieved her nervous force seemed aboiished almost, and she sank into a condition of extreme prostration, not responding at all to stimulants of any kind; her mind wandered. She soon relapsed into a condition of coma, and died six weeks after the operation from nervous asthenia.

Though not very often seen, a troublesome affection of the nervous system is mania, due to reflected

irritation from the sexual system. This cause of mental trouble may be the cause of a permanent insanity, or there may be only a diseased condition of the mind at the time of the period. This too may assume various forms of mania. It may be only a simple melancholy, a desire to withdraw from observation, a condition of sulks; or it may assume the form of violent maniacal excitement at the time and lasting through the period. The excitement may be good-natured, or partake of an irritability which makes the patient dangerous. The intermenstrual period is one perfectly lucid, or it may be still one of insanity, but good-natured and harmless. I have observed, when resident physician in an insane hospital, that the menstrual period was always one of great nervous excitement, necessitating close confinement of the patients until the period was passed, the same patients being harmless during the intermenstrual period and not requiring restraint. In another class of cases, melancholy is the prominent feature, combined with a monomania on some subject. In other respects the patient is perfectly rational. Like the other mental cases, we find the melancholy increased and the mental distress upon the one harassing subject increased as the period approaches, and ameliorated when it is passed, till comparative cheerfulness is attained. In these cases close observation reveals that the monomania is apt to be upon some moral

question, or the loss of some quality of the mind, supposed to have been previously possessed in unusual vigor. Now the cause acting back of all this is *masturbation*, and this, as a cause of uterine disease and consequent menstrual disorder, presents as a prominent symptom *suicidal tendency*. The habit of self-abuse is acquired by girls often at school, especially boarding-schools. At first they do not appreciate the moral wrong, nor are they aware of the fearful consequences to health. Like onanists of the male sex, they may be recognized by impaired health, fickle appetite, cold, clammy hands, averted looks, aversion to the opposite sex, cardiac palpitations, disturbed rest, vertigo, frightful dreams, and the readiness with which fatigue is superinduced by slight exertion. But, furthermore, the appearance of the genitals, especially the *labia minora*, is very characteristic. These have a dog-eared appearance, are flabby and pale. Small follicles jut out all over the surface, and tortuous capillary vessels are seen running about the surface. The clitoris is abnormally large and the hymen often absent. There is, too, a hyperæsthetic condition of the parts, and the woman often, though not always, is very erotic. The following conditions of the uterus are found when the habit has been kept up long enough to be a cause of disease. The excitement finally results in a congestion of the uterine mucous membrane, which gradually glides into an

endometritis. This is followed by the relaxation of the uterine ligaments, and consequent displacement in the form of retroversion, which displacement in turn interferes by impeding the menstrual flow both mechanically and by its reactive influence on the ovaries. These latter are often found enlarged and tender on pressure. Take an illustrative case.

Case XIX.—Miss K. G., æt 28, of nervous temperament, sparely made, black hair and eyes, placed herself under my care in May, 1885. She gave the history of dysmenorrhœa. Her manner at my first visit was much excited and she evidently was wrong mentally. She evinced great aversion to the male sex. She had for three months previously been under the care of a physician, who diagnosed the mental condition, and treated her with "whiskey and angostura bitters" for hysterical mania. He had once made a digital examination. Examination with the finger revealed a short cervix, abnormal heat of the vagina, uterus retroverted, ligaments relaxed, cervix stenosed. The clitoris was abnormally large, and the labia minora were dog-eared in shape and of the appearance above described. The hymen was absent, but the ostium vaginæ small and virginal. Her mental condition was most distressing, being in constant melancholy, and piteously lamenting the loss of her memory, which she felt convinced she would never regain. A tent was introduced for exploration of the uterine cav-

ity, and the following day when it was removed about a drachm of pure pus was discharged from the uterine cavity. She was placed upon active tonic treatment of nux vomica and phosphorus, with cotton balls saturated with glycerine, hot vaginal douche morning and night of salt-and-water. Masturbation was soon suspected, and she was charged with, and confessed to, having learned the habit while at school, but insisted that she had abandoned it some months before, which I did not believe. Her period soon followed the introduction of the tent, but was much better in every way than any she had had for many months. Battey's Solution No. 2 was applied to the cavity of the uterus twice a week, and under this treatment she improved in the most marked degree. I soon discovered her suicidal bias, and warned her friends of the necessity of close surveillance. On July 1st a second tent was introduced, larger than the first, and its withdrawal the day subsequent was followed by at least $\frac{\pi}{3}$ ss. of pus. Her period failed on July 4th, when it was due. On the 8th she was in better spirits than I had seen her. On the 9th she escaped the watchfulness of her nurse, and when found half an hour later was dead, having hung herself.

In this patient three factors were at work to produce insanity: predisposition from heredity, then the acquired habit of self-abuse, and, finally, the second acting as cause, the aggravated uterine dis-

ease. I am inclined to believe that could the sad accident which ended her life have been averted, persistent treatment of the uterine disease, with a firm control breaking up the habit of masturbation, and moral suasion, might possibly have eventuated in a cure. But this is a type of a sad and unpromising lot of cases.

Still another maniacal condition is that in which, while the patient has violent outbreaks, the moral sense seems to be the one upon which the reflected irritation falls, and she becomes in the highest degree vulgar in her actions and obscene in conversation. This is especially surprising in some cases, because we see the same symptoms in those who have always lived in an atmosphere of extreme purity, and where it has been impossible, both for lack of opportunity and inclination, to obtain any knowledge of facts with which in this alienated condition of mind they seem perfectly familiar. These are distressing cases, and while not hopeless, they try the patience and faith of the physician to the utmost. A persistent course of treatment with the bromides, chloral, etc., counter irritation over the hypogastric and ovarian region, treatment and cure of any uterine or ovarian disease, with firm, kind management and decided moral suasion, are the means from which most good is to be hoped for.

A case is referred to in the *Medical Record*, Sep. 24, 1884, copied from the *Wirner Medizinische*

Wochenchrift, reported by Dr. Cabadé, of a woman whose husband died under very terrifying circumstances while she was menstruating. The menses ceased at once and did not return for eight months. Later, she had acute maniacal attacks at each period, being sane in the interval. The mania recurred at each period and was only controlled by the bromides.

Of course our duty in these cases is plain, i.e., to seek for any local uterine or ovarian disease, and treat it. But if there be, instead of any lesion which we can diagnose and treat, some subtle influence at work, keeping up the mental trouble, the case is more difficult and hopeless in management, since the treatment must be restricted to nervous sedatives and depressants.

There is a class of cases in whom the uterine symptoms are of secondary importance to the nervous symptoms. The nervous system is overtaxed and neurasthenia or nerve tire is the result, and no hope of cure need be entertained in these cases by resort to local treatment. Ay, more, it is a moral wrong to subject these patients to a humiliating local treatment, especially if they be young and single girls. The strain must be lifted from the nervous system, the mind set at ease, and every device employed to do away with the existing malnutrition and malassimilation. The equilibrium of wear and repair has been disturbed and must be again ad-

justed. The nervous system feeling the strain, the vascular system is deranged through interference with proper action of the vaso-motor system, which regulates and controls the calibre of the blood-vessels, and therefore the volume of the circulating medium. Therefore jaded nerve-centres make poor blood, hence poor assimilation and poor nutrition. This condition of the nervous system results in localized anæmias and hyperæmias; may thus be a cause of amenorrhœa or menorrhagia, of capricious appetite, gastralgia, flatulent colic, indeed, of every form of nervous dyspepsia. The usual tendency to the uterus is *increase* rather than *diminution* of blood. Hence we find as one of the results of this nervous condition enlarged, congested, and prolapsed uterus and ovaries, and the patient a confirmed subject of hysteria. Not only may you have a menorrhagia from the increased determination of blood to the uterus, etc., in these cases, but dysmenorrhœa likewise; also irritable bladder, and of such a character, too, that vesical catarrh, or even stone, may be suspected. In fine, where there is nerve tire, all sorts of trivial causes may serve as excitant causes for an outbreak of some nervous distress. Hence the indications for treatment in these cases may be summed up in a few words: *improved nutrition, rest of body and mind, freedom from pain, and an improved circulation.* To obtain all this, Dr. Weir Mitchell has devised his massage and electrical treatment, and to

reap the full benefit of it insists on seclusion as being essential absolutely to success.

To a group of symptoms, i.e., *palpitation, with accelerated pulse*, swelling of *the thyroid gland and exophthalmos*, the name of Basedow's disease has been given (Ziemssen's Cycl., vol. xiv. p. 77). "The female sex are affected oftener than the male," and this occurs at the time of life that the woman is menstruating with greater frequency than either before or after. As a factor in this malady is to be noted frequently the occurrence of amenorrhœa. It is to be remembered, in treating these cases, that a proper distinction must be made between the menstrual derangement as a cause, and as only one of the results of the nervous affection.

The most common nervous derangement, when there is disorder of the function of the uterus, we see in one or more of the many forms of *hysteria*, from the simple globus to the condition where coma or violent convulsions are present. This affection is seen in many phases, and assuming the livery of many diseases. It often complicates the diagnosis, and the physician is misled into treatment for maladies which are not in any way akin to the cause of general ill-health, and the medical attendant is subjected to tedious watching and much anxiety because he does not appreciate the reflex nervous irritation springing from a diseased uterus as the cause of all the trouble. I would not be understood, how-

ever, to imply that a woman suffering from hysteria must of necessity have a uterine lesion. On the contrary, it is to be seen when various conditions have depressed the nervous system below its normal standard. The palpitation of the heart is a symptom present at this time, and one causing some alarm to the patient, especially as there may be experienced along with it dizziness, roaring in the ears, and other disagreeable head symptoms, which have not been properly interpreted. We see cases purely hysterical, which apparently are suffering much pain, others so reticent as to refuse to answer any questions and whose condition has caused serious alarm to the family and friends. The very sympathy and anxicty tend to aggravate the hysterical condition, and it is only the kind, firm treatment of the physician that arouses the woman from this annoying condition and relieves the fears and anxieties of friends. The following is a case in point: *Case XX.*—Miss W. has been long known in the community as possessing a very impressible nervous system, and has frequent alarming attacks of illness. I was summoned at midnight on one occasion to see her. Found that a brother, who had long been absent from home, had unexpectedly arrived that evening. She abruptly left the table, and half an hour subsequently was found in her room, speechless, exceedingly nervous, in fine, all the symptoms present of acute hysteria. She was "attacked," her family said, "by one

of her spells." I made light of the attack, explained that it was of no importance, administered a simple anodyne, and left her for the night. The next day I found her perfectly well, and learned the history of her case, traced all of her ill health and nervous symptoms directly to menstrual derangement, though, as I was not allowed to make an examination, I could not say what the real trouble was. She, being the patient of another physician, passed from under my observation.

Now, there may be menstrual derangement where there does not exist any organic disease of the genital organs. Long continued hysterics may be caused by menorrhagias which have kept up until an exhausted condition of the nervous system is produced. We undoubtedly see cases of hysteria, where the cause is ungratified sexual appetite, as in young widows, or married women whose husbands are invalided and impotent. Circumstances which remove these causes effect a cure.

The healthy uterus is very little, if at all, sensitive, but is largely endowed with nervous sensibility; hence, *when diseased*, it may be that even the slightest touch will cause pain. This nervous sensibility is reflex in character, and through this medium every part and organ of the body is brought into sympathy when the uterus is diseased. There may be two elements giving rise to many interesting affections known under the general name of hysteria.

These elements concern, first, the nervous centres: there may be simply *undue impressibility;* the *emotions* only may be involved; the patient may be unusually sensitive to *reflex influences;* there may be *actual disease;* secondly, reflex exciting irritation in the womb, in the ovaries, elsewhere. With an impressible nervous centre, irritation existing in other organs or viscera may be the peripheric source of irritation, giving rise to some hysterical manifestation. The uterus, or rather the generative system, being the most common starting-point of the peripheric irritation, has determined in a great measure the term hysteria, applied to the various nervous phenomena which we so frequently observe clinically in these cases; but the fact that peripheric irritation from other organs may be the cause of similar nervous manifestations, proves that the term hysteria is not invariably indicative of generative disturbance, but this *is true* in a large proportion of cases. The reflected irritation from the uterus manifests itself commonly in the nausea of pregnancy. But many facts go to prove that this affection is not due simply to the evolution going on in the uterus, but that some pathological condition is the cause, as when there is flexion or misplacement. Prof. Charcot confirms the views of Negrier that the ovaries are responsible for the convulsive manifestations (of hysteria) (Hewitt, vol. ii. p. 127).

The above fact, illustrative as to pregnancy, is

with slight modification true as to uterine disease. Every gynæcologist has observed in cases of uterine disease, nausea, simulating the nausea of early pregnancy, and sometimes it is a point presenting difficulty in diagnosis. *Nausea and vomiting* are the most common of these reflex disturbances. Next comes *hysterical attacks*, and the *various hysterical sensations; thirdly*, *hystero-epilepsy; fourthly*, *reflex mental disturbances; fifthly*, cephalalgia.

Dr. Hewitt lays great stress upon the connection of nausea with flexions of the womb, and my own observations have confirmed his. He gives a large number of cases in which the patient had been reduced almost to the verge of the grave, in whom a restored flexion was the starting-point in a return to health. If flexion be the cause, then we have also obstructive dysmenorrhœa, and the relief for both it and the nausea is plainly in such treatment (mechanical or operative) as will relieve the flexion. In simple cases only rest in the recumbent position is necessary, on the *back* in cases of anteflexion, and *prone position in retroflexion*. Suitable diet, such as the stomach will tolerate, is to be given. Elsewhere we have discussed the treatment of flexions by mechanical and operative procedure. It is to be remembered, however, that not infrequently at the beginning of treatment the symptoms are aggravated, and the treatment apparently does no good, but it is essential to success to persevere. If the

stomach continue too irritable to take, retain, and digest food, recourse must be had to rectal alimentation. Various cases have given reputation to as varied remedies. The application of a belladonna plaster to the epigastrium will sometimes be very beneficial. Internal medication may embrace drop doses every half hour of tinct. iodine, oxalate of cerium, dilute hydrocyanic acid, etc., etc., but after all most good is to be looked for from a correction of the uterine disorder.

It is not our purpose here to go into an elaborate discussion of hysteria or hystero-epilepsy. The reminder that these conditions are often caused by uterine derangement is sufficient to cause investigation in that direction. A fuller discussion of the affection *per se* is to be found in those works to which it is a more pertinent subject than in this, devoted as it is to menstrual derangements.

Cephalalgia is observed sometimes most obstinate and distressing in character, says Dr. Hewitt ("Dis. of Women," vol. ii. p. 168), in cases of long standing flexion. The following case illustrates this point: *Case XXI.*—Miss C. T. B., a governess in a large female school, took cold while menstruating. The flow was checked, the subsequent amenorrhœa was obstinate and long continued, and finally yielded to dysmenorrhœa. She suffered for some time with intense headache, lasting nearly twenty-four hours. After bearing her malady for two

years she submitted to treatment. Vaginal examination revealed anteflexion of the womb. Posterior section of the cervix was made, resulting in relief of the dysmenorrhœa and entire cure of the cephalalgia.

In conclusion, these cases must be treated actively by such means as will completely restore the general health. Ferruginous tonics, arsenic, strychnia, but especially preparations of *phosphorus* and the *hypophosphites* are the medicines from whose exhibition most good is to be derived. In fact, the good that results from the administration of *phosphorus* and the *hypophosphites* is in many cases astonishing. Though I have before referred to it, I would again emphasize the importance of detecting, if it exist, the local lesion, its efficient treatment and cure. Thus a source of irritation is removed, and the benefits to be derived from a general tonic treatment enhanced.

CHAPTER X.

THE MENOPAUSE.

THE age of puberty and the climacteric are two periods in a woman's life which are considered critical, and to the approach of the latter time all women look forward with more or less dread; and well they may, for it is a period of life when every woman is more or less liable to the fastening upon her system of some serious malady. It has been said that the woman who starts wrong at puberty is apt to go wrong to the end, or rather she is apt to have trouble when menstruation ceases. Nevertheless, statistics prove that the rate of mortality among women between the ages of forty and fifty is not in excess of that occurring among men of the same age.

The fruitful period of a woman's life does not embrace more than thirty years, and in many instances falls under that period of time. She then begins at the age of forty or forty-five to experience irregularity in the menstrual flow, with coincident impairment of her general health, until the menses ceases altogether and she recovers her usual health. To this period of life has been given the terms

menopause, climacteric, etc. About this time comes, too, the cessation of all ovarian activity. Various maladies, functional and organic, innocuous or malignant, may and often do develop at this period of life. The mental poise is disturbed, and in some cases we see insanity established, or the nervous system is in a condition of irritation, and sundry and curious and obscure nervous affections manifest themselves. Uncomfortable and irregular *flushings* are one of the phenomena, full of discomfort but comparatively innocuous, unless a factor in some more serious trouble. The thermometer does not show exaltation of temperature, but the woman herself is conscious of increased heat. The face reddens, the palms of the hands burn, and she is conscious of an uncomfortable glow about the body, which in a longer or shorter period subsides. The pelvis is frequently the starting-point for these sensations, sometimes some other part of the body may be. These flushings may be due to an effort of nature to equalize the circulation, or it may be a reflex of changed inervation. Nerve stimulation which previously had been directed to the pelvis is now no longer demanded in that direction and must be disposed of. The condition is the reverse of what takes place at puberty; then there is evolution of the generative organs and the establishment of such conditions as favor procreation. Now we have involution of these organs. The child-bearing

period is past, and the organs which have been engaged in the generative function undergo atrophy, or shrinkage. The uterus is smaller, its nutrition altered, and the ovaries become smaller and smaller each year, until in old age they are scarcely discoverable. The mammary glands are found congested and painful during the process of change, but when it is accomplished they, too, undergo atrophy.

It is to be borne in mind how richly the uterine system is supplied with nerves, how vascular are all these parts, and that nutrition is directed and controlled by the sympathetic nervous system, even the minutest capillary having its vaso-motor nerve. The centre of this influence is in the solar plexus of nerves, whence through the pneumogastric it is intimately connected with the central sensorium. Influence is reflected also to the gastro-intestinal canal, the heart, and lungs. Thus we can understand how, when at the menopause the nutrition of the pelvic viscera is altered and diminished, the reflected influence is such as to stand in the relationship of cause to effect in the production of the cephalalgia, vertigos, cardiac palpitations, asthmas, or intestinal irritations which we are called upon to relieve. The failure to perfectly establish the menstrual function at puberty is followed by disturbance of the general health in various ways. The analogy is perfect, that when the function ceases, after

having borne so active, important, and prominent a part in the organism for so many years, the balance of the system is disturbed, and time is required to establish the equilibrium. Changes in the nutrition of these organs weakens their vitality and makes them especially liable to the inroads of serious organic mischief, especially the various forms of carcinoma.

The average age at which the menopause occurs, Tilt, in a long table, based upon observations made in Paris and London, places at about 45 ("Change of Life," p. 21). The cessation of the flow is sometimes accomplished, but still there is a discharge of blood from the genitalia. The woman having passed the age when menstruation is at an end, the flow keeping up, careful examination should be directed so as to arrest the hemorrhage. There is always strong presumptive evidence of pathological lesion to account for the bleeding, and careful and persistent investigation should be made until the cause of the flow is ascertained, and, if possible, removed.

Furthermore, as to unusual cases, the flow has been regular beyond fifty, and known to cease as early as twenty-nine. Many cases, authentic, have been recorded of long continuance of the menses and child-bearing late in life, but are not pertinent to the subject now in hand and will not be reproduced.

Various causes may arrest the flow, such as ner-

vous shock, etc., but we can have no suspicion that the woman has reached the climacteric, except by the subsequent developments in the case. If her health be fully restored, and she is near the average time of life, we may then conclude that she has passed that period. We must not conclude that the flow has been re-established if a bloody discharge again appears, unless it possess all the features of regularity in occurrence and quantity. Early cessation may be caused by the exhaustion of parturition and lactation, injury from falls or blows on the sacrum or pelvis, cold, fright, and various diseases.

This comes about in some cases by, first, irregularity in the flow without any discomfort attending it, except, perhaps, the woman is easily exhausted by exertion, or has temporarily a lowered general health. From irregularity it passes on, and is succeeded by leucorrhœa, which in turn itself disappears. Various diseased conditions of the uterus and its appendages may cause premature failure of the menstrual flow. In some cases it is desirable to bring it about to relieve agonizing physical suffering. To Dr. Battey is due great honor for having so fully and successfully established a treatment which brings relief to the poor sufferers, who before had naught for their portion but suffering and despair.

The differential diagnosis of the affections which

may be confounded with a change of life must be made out by the light of experience and close observation of each individual case. Did I enter here into a consideration of these, this volume would become too extended. It is with the diseased conditions which occur at this period with which we are most concerned, especially those which have not been considered in the previous pages when discussing other affections.

There must be some means of compensation, for the woman for many years has been accustomed to the loss monthly of several ounces of blood. The balance is preserved by increased action of the skin, increased elimination of carbon by the lungs, increased action of the kidneys. In these ways is the system compensated for the suppression of a discharge to which it has been accustomed for a period of years.

We have a plethoric type of cases, a chlorotic, and a nervous. The general health of even the plethoric cases is impaired, and they are not conscious of being in as full health as their appearance would indicate. The chlorotic cases are in such a condition from an altered condition of the blood. The nervous cases are abnormally excited by trifles. They are easily startled by noises, etc., and are very panicky as to the possible onset of some grave disease. organic in nature, which they fear may end life.

We will not enter into a detailed discussion of the many and varied maladies which attack woman at this critical period of her life. They are in the main affections and conditions seen under other circumstances and at other periods of life. A simple reminder of woman's unusual susceptibility at this period of her life to these varied affections of uterus and appendages, of circulatory apparatus, of nervous system, and the skin, is sufficient to put the practitioner on his guard, and give him a reason why many of them do not yield so promptly to treatment as they would under other circumstances, and also to make him guarded in his prognosis.

Nervous affections, which had not previously existed, may be developed at the climacteric, as, for example, epilepsy, and others, notably chorea, which had been cured in the early period of menstrual life may, indeed is, liable to return when the change comes. Under such conditions the prognosis as to cure is favorable.

We see lymphatic women, upon whose system the periodical discharge of blood has been too great a tax, improve in health after this time, because the blood before lost is now retained and applied to the nourishment of the body. Plethoric women, however, are liable to hemorrhages and local congestions.

Social position exercises a modifying influence on the affections incident to this period. Those sur-

rounded by luxury and who lead idle lives are much more susceptible to nervous affections than those more impoverished and of a lower social position, who are forced to earn a livelihood for themselves and their families, subjected to changes of temperature, greater fatigue, or who are never free from the worry and care of children.

The prognosis of the diseases usually occurring at this period is in the main favorable, but sometimes the change is so critical that the ganglionic system does not seem to react from it, and, though there is no organic disease apparent, the woman goes on for years feeble and more or less invalided.

Tilt says ("Change of Life," p. 73): "In going over my numerous cases to discover why some women suffer so much and others so little at this period, I come to the conclusion that it does not so much depend upon the strength enjoyed by the system, which is constitution; nor in the visible predominance of one set of organs over the other, which is temperament. Neither does it depend on the menstrual flow ceasing early or late, nor in women being single or married, rich or poor, but on a peculiar susceptibility of the nervous system, a condition hidden from the microscope, but evident from the manner in which it responds to the reproductive and to all other stimuli. Women who suffered much at the change of life had often suffered much at puberty and at menstrual periods; while

these had seldom been attended with distressing symptoms in women who suffered moderately at cessation; for among the thirty-nine cases where there was no suffering, there was the same immunity at puberty and at the menstrual epochs. I therefore conclude that the diseases of the change of life, like those of puberty, are to be ascribed to the nervous system being unable to tolerate the stimulus imparted to it by the coming into power of the reproductive organs, nor the loss of this stimulus on their falling into decay; for when the nervous system is well-tempered, this stimulus improves health instead of disturbing it. Vital acts, however, are never found cut and squared with mathematical precision, and I have had some patients who suffered much at cessation, although their previous health had been uninterruptedly good."

Of course if the woman enter the change of life with some diseased condition of the general or generative system, she is much more liable to greater suffering, and succumbs more easily under the influence of some nervous or mental shock.

Let it be borne in mind, that under some circumstances the flushings and sweatings which occur in some cases act as safety-valves, and interference with these is the starting-point of more serious maladies.

In the treatment of woman during this critical period of life, our chief aim is to sustain the system

in such a manner as to allay nervous irritation, and supply stimulus and nourishment which will keep the patient as nearly as possible at the normal standard of health. This is the broad indication; the more exact management must be directed to the administration of sedatives, alcoholic stimuli, suitable food, or such agents as are necessary to control hemorrhage, or retard or remove disease threatening in the uterus and appendages, or in other parts of the organism. It is an axiom not to be contradicted, that drugs are not to be administered in any case when simpler and less active agents will accomplish the same end. I cannot too emphatically protest against *the injudicious prescription of narcotics* or *alcoholic stimulants* at this time of life, because there is great danger of developing a dependence upon these dangerous agents, from the slavery of which it afterwards becomes almost or quite impossible to free the victim. It must be remembered that the nervous and mental conditions especially to which women are liable at the menopause, are favorable to the development of the chloral, opium, or alcoholic habit. Great responsibility rests on the medical attendant in these cases, lest in relieving physical suffering he substitute a condition which brings shame and disgrace upon the woman and her family.

Where there exists a depressed mental condition, insomnia, etc., it is better to get the patient's mind off of self by pleasing variety of association and

scene, by regular exercise, by keeping from her, so far as possible, everything that tends to depress. In fine, to endeavor by the force of good influence to lead the mental condition up to a healthy point. I would counteract sleeplessness by the administration of some form of concentrated nourishment just before she retires, such as milk, a warm salt-bath is most soothing and refreshing; trying thus simple means before resorting to the bromides, chloral, morphia, or alcohol. When it is necessary, as it often is, to resort to these agents, it is the physician's duty *not to loose sight of the fact that he has prescribed them, and firmly and decidedly to withdraw them* as soon as the necessity for their exhibition has passed. We can give often more lasting benefit by tonic treatment of strychnia, or some preparation of phosphorus combined with iron, than is to be had by anodynes, sedatives, or alcohols, and by such treatment we fulfil rational indications and improve the nutrition of the body. In very plethoric cases, bleeding, local or general, may be of great service, soothing the nervous system and equalizing the circulation. Of course we must not loose sight of any local disease in any organ; it must be promptly and efficiently treated. The woman must be kept as free from excitement of all kinds as possible, and should therefore be relieved of all the cares and annoyances of domestic life. Indian hemp, camphor, henbane, are spoken of by Tilt ("Change

of Life," p. 79) in terms of warm commendation for the purpose of allaying the generative irritability sometimes present, and which, reacting on the nervous system, causes insomnia and nervous depression, and which I have seen as a factor present in the production of menorrhagia. When much ovarian irritability is present, suppositories of opium, belladonna, etc., may be resorted to with great comfort to the patient. *Ovarian irritation must be controlled.* Local pains in the epigastrium, or morbid sensations in the limbs or various other parts of the body, cerebral irritation, etc., may be relieved by local applications of stimulating liniments, belladonna or other plaster. Dyspepsia must be treated upon the rational principles which apply to its management under other circumstances.

If insanity be threatened, and irritability of the pelvic organs be evident as the factor causing, or in large measure influencing, the cerebral irritation, decided and controlling sedatives should be promptly applied in the form of anal suppositories, not neglecting such other general means as tend to allay nervous irritation.

I have before referred to general blood-letting. There are some plethoric cases which apparently suffer from weakness. These may be positively strengthened by abstraction of blood, and in some of these cases nature indicates the remedy needed by hemorrhage from some point in the system.

When this occurs it should be watched, guided, and controlled if it threatens to go too far.

The emunctories of the body should not be lost sight of. The bowels must be kept regular and healthy, and the *kidneys* carefully watched, that the proper amount of urine is eliminated each day, and that no insidious disease, like Bright's disease or diabetes mellitus, be established when least suspected. Alkaline waters, especially the lithias, are very valuable in these cases, and foremost among them I would place the Wolf Trap lithia.

All women should be informed of those conditions which indicate approaching change of life. Thus much evil may be prevented. Irregularity in the flow, unless the woman be pregnant or nursing, sinking sensations at the pit of the stomach, unaccountable perspirations and flushings, though the woman has not reached the average age for cessation, indicate rather the necessity for guiding and helping nature in a physiological process which she is endeavoring to fulfil, rather than the taking medicine to force a flow which is on the threshold of abolition.

Marriage during this unsettled period is to be deprecated and avoided, even though the woman feel sorely the stress of greater sexual appetite than she had ever known before. Tilt says ("Change of Life," p. 94), "that experience teaches him that increased sexual appetite at this period of life is a

morbid impulse, dependent upon some neuralgic or inflammatory condition of the uterus or ovaries. Marriage at this period, or frequent sexual intercourse in the married, may result in obstinate uterine disease, menorrhagia, cancer, etc., or some women may become insane." Care should be taken at this crisis of life to allay all genital irritation, and the woman should be careful to avoid any unusual fatigue. Such food should be taken as the woman's condition may require; low diet if she is plethoric, generous diet if she is chlorotic and her blood depraved. Nervous symptoms may be prominent and distressing in both these classes, and are to be treated upon sound common-sense principles. If the plethoric woman suffers from insomnia and other nervous distress, generous diet will aggravate her troubles, and she will find greatest comfort in rigid restriction. *Per contra*, in the opposite condition benefit will accrue from generous living. Hygienic regulation of all the functions and habits of the body is of the greatest importance, and should be carefully attended to. Especially should she keep early hours. "Nature's sweet restorer" will soothe and allay every irritation, and bring comfort, physical and mental, as perfectly as anything else.

Remembering the importance of the crisis and the strain upon the nervous system, the medical attendant must deal with any and every mental

perversion, with patience and tenderness, soothing and guiding, diverting the mind from gloomy views of self, or surrounding objects, and gently wooing it back to health as time passes on, till the ordeal is past, and the woman stands again with self well in hand, strong and able to confront the duties and responsibilities of domestic life, and to find joy and comfort indescribable in administering to the comfort or contributing to the happiness of those around her.

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